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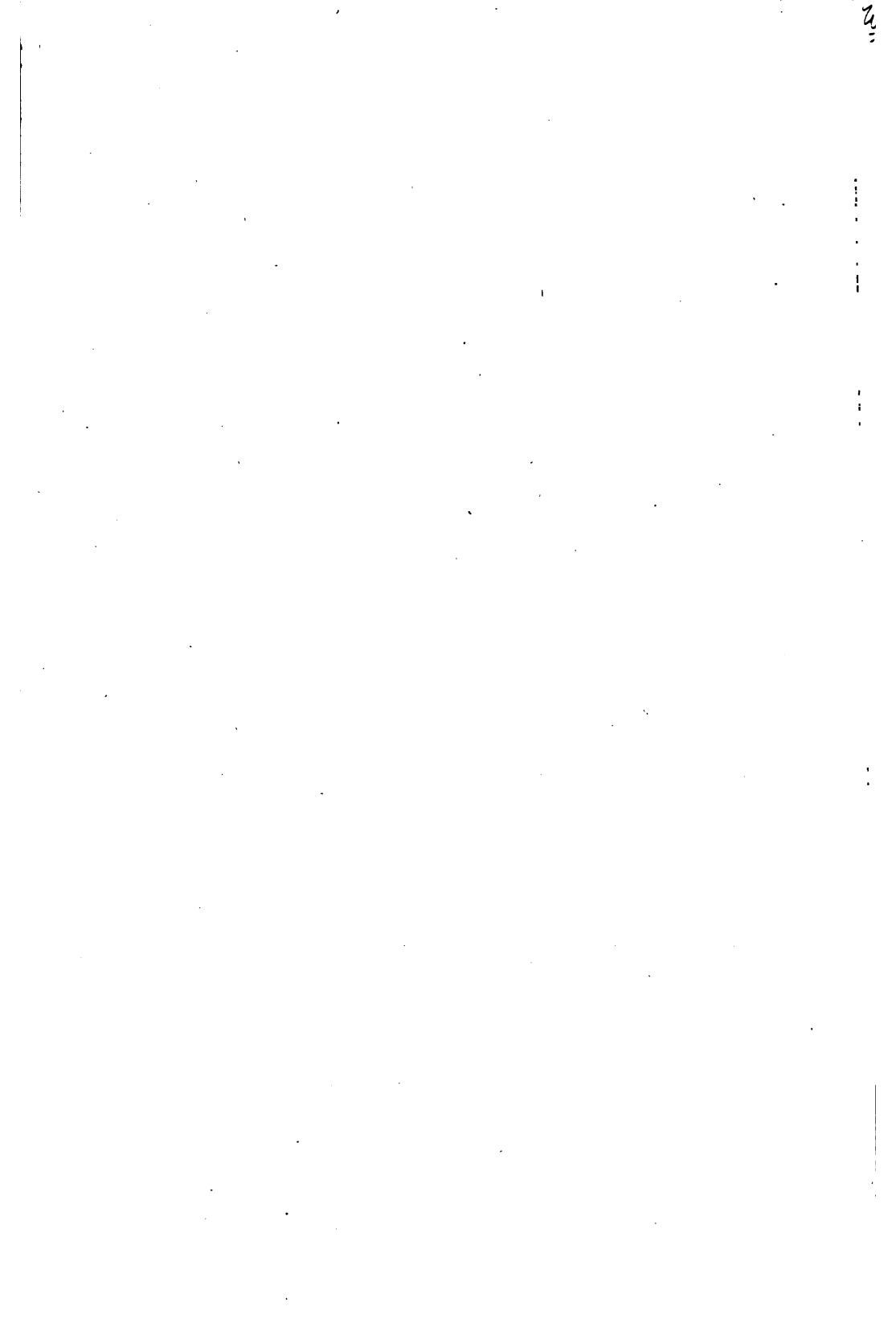


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Wisconsin Dairy & Food Commission

ANNUAL REPORT

OF THE

Dairy and Food Commissioner
OF WISCONSIN

For the Period Ending June 30, 1917

GEO. J. WEIGLE

Dairy and Food Commissioner

Ex Officio

State Superintendent of Weights and Measures



MADISON, WIS.

DEMOCRAT PRINTING COMPANY, STATE PRINTER
1917

DAIRY AND FOOD COMMISSIONERS OF WISCONSIN

H. C. THOM-----May 29, 1889, to May 28, 1891
D. L. HARKNESS -----May 28, 1891, to June 11, 1894
THOMAS LUCHSINGER -----June 27, 1894, to Feb. 7, 1895
H. C. ADAMS-----Feb. 7, 1895, to May 1, 1902
J. Q. EMERY -----Dec. 24, 1902, to Feb. 10, 1915
GEO. J. WEIGLE -----Feb. 10, 1915, to -----

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ORGANIZATION OF THE COMMISSION

GEORGE J. WEIGLE, Dairy and Food Commissioner, *ex officio*
State Superintendent of Weights and Measures.

RICHARD FISCHER, Ph. D., Consulting Director of Chemical Laboratory.

E. L. ADERHOLD, Assistant Commissioner.

C. E. LEE, Assistant Commissioner and Dairy Specialist.

HARRY KLUETER, Ph. G., Chemist.

FRED P. DOWNING, A. B., Chief Inspector of Weights and Measures.

FLORENCE Q. NORTON, Secretary (to November 1, 1916).

ETHEL D. THOMAS, Stenographer, Office of Weights and Measures (to Dec. 16, 1916).

BERTHA HAHM, Stenographer, Office of Weights and Measures (from Dec. 13, 1916).

M. LORAIN WALTER, Stenographer and Confidential Clerk.

RUTH NERDRUM, Stenographer.

AGNES NEUBAUER, Stenographer (from July 5, 1916).

E. JOY McLAUGHLIN, Clerk (September 13-23, 1916).

ADELAIDE SCHWENKER, Clerk (Nov. 9, 1916-April 5, 1917).

LOUENA FINDORFF, Stenographer and Bookkeeper (from Oct. 16, 1916).

JULIA TORMEY, Clerk (Aug. 9-Sept. 9, 1916).

NORA BACKEBERG, Clerk (Jan. 31-March 15, 1917).

WM. A. BRANNON, M. A., Assistant Chemist.

IRVING R. HOWLETT, B. S., Assistant Chemist.

CARL GEIDEL, M. S., Assistant Chemist.

D. F. HOSMAN, Assistant Chemist (Oct. 1, 1916-April 1, 1917, half time).

WALTER NEBEL, Ph. D. (from June 15, 1917).

GEORGE H. EIGENBERGER, Food Inspector.

J. D. CANNON.

R. B. SOUTHARD.

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J. B. LINZMEYER (to Jan. 12, 1917).

JACOB LEHNHERR.

FRED MARTY.

JAMES VAN DUSER.

S. J. DUFNER.

S. B. COOK.

F. S. HANSON. (from Feb. 18, 1917).

*Dairy and Food Inspectors.

J. E. BOETTCHER.

H. L. BORNHEIMER.

GEORGE WARNER.

W. J. KRAMER.

B. A. HASS.

WM. P. STERNS.

CHAUNCEY BECKWITH.

W. A. VOIGT.

**Sealers of Weights and Measures.

LEO BRENNAN, Junior Sealer of Weights and Measures.

* Sealers of Weights and Measures for creameries and cheese factories.

** Inspectors of food and sanitary conditions at places where weights and measures work is done.

LETTER OF TRANSMITTAL

His Excellency, EMANUEL L. PHILIPP,

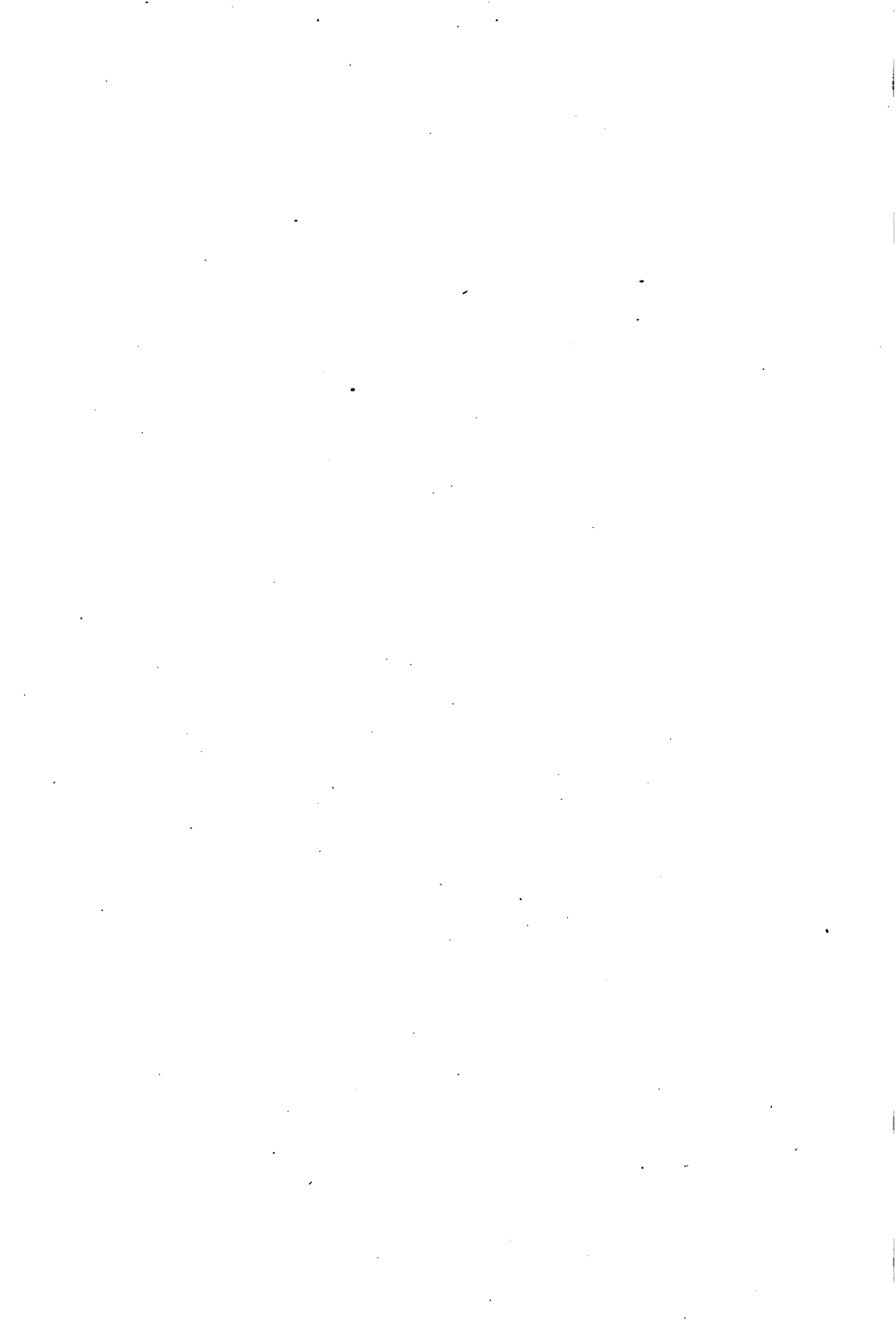
Governor of Wisconsin.

Sir:—I have the honor to submit herewith, in compliance with law, the report of the dairy and food commissioner for the annual period ending June 30, 1917.

GEO. J. WEIGLE,

Dairy and Food Commissioner,

*Ex Officio State Superintendent of Weights
and Measures.*



REPORT OF COMMISSIONER

In this report will be found a résumé of the work accomplished by the dairy and food commissioner during the fiscal year ending June 30, 1917. It contains, among other things, the number of groceries, meat markets and drug stores inspected; the number of specimens of foods, drugs, linseed oil, turpentine and white lead collected throughout the state and the state chemist's report on said articles. It also shows the work done by the dairy department, the number of dairy farms, cheese factories and creameries inspected and the investigations made of the city milk supply. The weights and measures department also gives a complete report as to the conditions of weighing and measuring appliances throughout the state. This report also shows the number of convictions secured against persons violating our food, drug and weights and measures laws, together with the amount of fines imposed therefor.

For the purpose of convenience and to expedite the work of the department, the state is divided into inspection districts. Each of the inspectors has a certain number of counties in which to work, and each is, in a measure, accountable to the commissioner for the conditions existing throughout his district. At the present time nine dairy, eight weights and measures and two food inspectors are employed continuously. The dairy division is in charge of C. E. Lee and E. L. Aderhold assistant commissioners. The weights and measures department is under the supervision of Fred P. Downing as chief inspector.

Our laboratory, in which we employ four chemists, is in charge of Harry Klueter as chief chemist and Dr. Richard Fischer as consulting director. Mr. Klueter also has charge of the food work.

Owing to the increased amount of work which the legislature placed upon the department it was necessary to increase our office force from three stenographers to six, and two additional stenographers were employed during the busiest time of the year, in order that the work of the department might be done promptly.

The work in our laboratory has been done under a handicap because of the fact that the federal government called to Washington, Carl Geidel, bacteriological chemist. Up to this time it has been impossible to secure a man to take his place, owing to the scarcity of bacteriological chemists throughout the country.

I regret that our legislature does not more fully realize what the

work of our department has been and is, and appreciate the benefit it is to the people of the state, and pass legislation when asked by the department so that a better enforcement might be had and many violations obviated. I wish to mention, in particular, the seizure law, which is so necessary to make our food laws perfect. The necessity of additional legislation in the matter of food laws has been felt by the department for some time past. Steps were taken during the last session of the legislature to secure the passage of the seizure law. It is to be regretted that this bill, which, if it had become a law would have been of inestimable benefit in carrying out our food laws, failed in its passage. We are pleased to state, however, that several of the bills in which the department was interested, were enacted into laws. The laws, as we find them, will be as rigidly and intelligently enforced as it is in our power to enforce them, with a determination to put the department on a basis where the manufacturer, the jobber, together with the retailer and consumer, alike will receive justice and as courteous treatment as it is within our power to extend.

If the value of the work of the dairy and food commissioner could be determined in monetary terms, it would show results many times in excess of the entire appropriation to the department.

THE VALUE OF INSPECTION

No one can estimate the value of the work of the inspectors of the dairy and food department to the dairymen and to those who are interested in the manufacture of dairy and other food products. It has made the careless man see the necessity of producing food under clean conditions at every point, from production, through shipment and selling—from producer to consumer—and it has also shown the importance of having laws enacted dealing with sanitation.

The value of inspection has, at various times, been questioned, but that attitude is not adopted by those who have a practical knowledge of the subject. The work may be, in the minds of some, very slow, because inspection is a big problem and its economic aspects are serious; or it may not be possible to show results in convincing figures, but he who will take the trouble to go through the dairy farming districts, with an unbiased and open mind on the subject, and who is interested only in seeking the truth of the matter, will be astonished at the great amount of good accomplished by efficient inspectors.

A few of the more negligent and ignorant of the farmers and dealers have been bitter at times because inspection has forced them to be more careful in the handling of their products, but in great numbers of cases, men competent and careful, and who appreciate the importance of cleanliness and purity in food for human consumption, are glad of the inspector's advice and abide wil-

lingly by his orders and those of the head of the department under which the work is done.

The purpose of inspection is for the protection of the great dairy industry, for the protection of the honest manufacturer, jobber and dealer, for the education of those who lack knowledge and experience, to show correct methods of producing the best possible results in the best possible way, and also for the protection of the consuming public.

The dangers of dirt, disease and adulteration in foods, we can scarcely hope to wholly avoid, but they can be successfully combated whenever enough civic interest has been awakened in recognition of the peril and the need of a remedy to insure sincere and intelligent cooperation of all the forces in society. This cannot be done wholly by governing bodies of cities and states or of the nation; parents alone cannot accomplish the task, unaided; physicians cannot do it, nor can farmers and milk dealers themselves. But all of these forces, combined, working wisely together, can bring about infinitely better conditions in the food supply through cooperation in inspection, and demand for it. It is realized that a majority of the producers, dealers and retailers know so little as to amount to practically nothing at all, regarding the nature of milk and the grave dangers which result from its careless and improper handling, as well as the careless and improper handling of other human foods. Yet such knowledge is essential to public safety, and inspection is a factor in disseminating such knowledge both as to the manner of handling the products and the laws governing their sale under clean and sanitary conditions.

Most of us do not do things on our own initiative the way we know they should be done. We need public sentiment or something outside of ourselves to force us to do as well as we can.

When inspection was first started, some inspectors went about with the idea that the man who was manufacturing dairy products was a wilful violator of the law, and assumed the authority of a police officer only, and not that of an educator. Today, however, things are different. There exists a different spirit both among the inspectors and those being inspected. It is the cooperative spirit that exists. The inspector is learning that the manufacturer of butter, cheese and other dairy products, who is within the jurisdiction of the inspector, is willing to cooperate with him and not antagonize him. Each is learning that the other is human and eager to do right.

It cannot be expected that the farmer or dealer will be enthusiastic about changing his methods of handling a product, as the inspector suggests, when the change will mean, perhaps, a good many dollars out of his own pocket at the time, but if he can be made to understand and realize that a better, cleaner product will, in the end, mean a greater amount for his purse and a better reputation for himself and his business, he is less averse to making the necessary improvements.

On the other hand, the manufacturer is just as quick to resent it when an inspector tells him in a high-handed way how to run his business just as we would if a man came into our office and told us how to run our business.

The inspector must have knowledge, he must have experience, and he must use that knowledge and experience judiciously and with tact, in order to obtain the best results, for much is left to his personal judgment. We are making more progress today toward the ultimate goal for a better product; we are learning that there are many different ways of accomplishing the same results, and that some have to use different methods in obtaining these results. We lay more stress on education than we do on prosecution. No man who offends the letter of the law, through honest misunderstanding, in my opinion, should be prosecuted. The defects are the result of either wrong conditions or false methods, and I believe he should be advised how to correct them and be given reasonable opportunity to do so.

I believe it is necessary to acquaint the people with the law, show them the necessity of the law, and then obtain compliance by an educational campaign. I believe I am telling the truth, and the truth cannot be questioned, that the average man does not understand the meaning of the law nor its interpretation. Every man wants to obey the federal and state laws, and the minute he is shown their value he is willing to abide by them, and for this reason the inspector should put forth every effort to see that the law, and the application of the law, are understood by everyone interested.

However, education alone is not sufficient. Conscientiousness is needed to guard against the lapses to which human nature is liable. Official supervision is necessary.

In carrying out the inspection, the inspector not only sees that the product is produced and manufactured under sanitary conditions, that the product is up to standard, and that the proper methods are used, but it should be the duty of the inspector to teach men to do things and think for themselves, for there is nothing which adds so much to the treasures of the mind and increases its power, as its own thinking. It is all very well to hear and to read the wisdom of others, but one should not let this take the place of his own thoughts.

The work of the dairy inspector will be much more effective and far-reaching if he enters into a closer relationship with the producer. As a matter-of-fact, by reason of his training and ability, he should be the foremost authority in his community on matters pertaining to milk and its products. Dairy inspectors in their work depend for success largely upon the moral support of the communities in which they work. Nothing can do more to arouse this spirit of cooperation than a broader understanding and closer compact between the inspector and the producer.

John Spargo, an authority on the question of clean milk and its

products, says—and I thoroughly agree with him—"I look mainly to increased and more efficient inspection for the improvement of our milk supply. Not the old-fashioned inspection which aimed mainly at catching the culprit, but the more efficient inspection which seeks the intelligent cooperation of the farmer; the inspection which lays most stress upon education and least upon persecution. The most efficient worker for reform is not the sharp-nosed inspector who catches the occasional culprit, but the man who can win the confidence of the farmer; the man who can successfully appeal to his good sense and show him the practical advantages which arise from observance of certain elementary rules of hygiene."

It is true that there are some men who stand in their own light and who are a detriment to the industry. Such men will always find fault with inspection. No false sympathy should be wasted on men who are deliberately violating the dairy and other food laws. The fact that a man is a good fellow should weigh nothing in his favor when he is charged with adulterating food or violating the law in other ways. If the people thoroughly understood the matter, public sentiment would be a unit in demanding the strictest investigation and the most severe punishments for all violators.

The laws as well as the inspections have received the support of the thinking men of the country, and most of these laws have been based upon first hand information received through inspection. They are the protection against unfair competition.

In order to produce a good product one must have good wholesome raw material, and good raw material begins on the farm. By our inspections on the farm we have induced the farmers to bring about a better housing condition of cows, to take better care of their raw material and to build milk houses. We have induced the farmer to place his separator in suitable quarters so that raw material of the best quality can be produced. We have also taught him to take better care of the milk cans, for clean milk cans are very essential in the production of good butter. The average farmer was not aware of the fact that open-seamed or rusty cans were liable to cause an off-flavor in the butter. We have taught the farmer to cooperate with the butter and cheese maker, as it meant not only financial gain to the butter and cheese maker, but to himself.

If a housewife complains of the quality of the milk she purchases, the complaint is investigated. Samples are secured and such action as is necessary taken. When an examination of the milk is completed, the matter is turned over to the inspectors who investigate the creamery or milk station from which the milk came, and then trace it back to the farm from which the creamery or milk station is supplied. The requirements of inspection are thus many and complex, but the results show accomplishment that is encouraging to the department, and to those who are interested and eager to protect the health of themselves and their children through the securing of clean products.

Through inspection we brought about better working conditions for the butter and cheese maker and better working conditions for health means more interest in the work, and more interest in the work means a better product. It is also a credit to this state to have better factory buildings and better equipment where food products are produced. All of this can be brought about by thorough and efficient inspection.

Inspection also has its effect on the product itself. While quantity is something to be desired, yet quality is to be considered first, for quality insures reputation and increased demand for the brand manufactured, irrespective of price. When once the quality is established, price is a secondary matter and so few of us realize this. It means a satisfied customer and an increased consumption of the product. The inspection is one assurance to the consumers that they are receiving products which are safe and wholesome.

Inspection has eliminated all kinds of unfair competition. The inspector is in a position not only to assist in pointing out the necessary changes to be made in a plant or on a farm, but to show ideal methods of handling products efficiently and economically.

The rigidity of inspection in this state on farms, creameries and other places where human food is produced should not be lessened, but rather increased, for there will always be the necessity of careful inspection and supervision. Eternal vigilance means the saving of the great dairy industry of the state, and it is a great task of the future to educate the people further to demand a better chance for health through clean food products, a condition brought about by efficient inspection and carefully framed and rigidly enforced protective laws.

During the first week of January this year, the dairy and food inspectors were called to the office for a conference relating to the method of procedure in making an inspection of the market milk supply. As a result of this conference a very complete study was made of the general condition of the market milk furnished to the people of 210 cities. (See detailed report of market milk inspection by C. E. Lee, assistant commissioner). In this work the men in the field have rendered good service.

During the year 1271 butter factory inspections and 2944 cheese factory inspection reports were filed at the office. In market milk inspection 2593 dairies were visited and 688 dairy farms producing milk or cream sold to manufacturers of butter, cheese or condensed milk. On these farms there were 31,503 dairy cows.

PROGRESS OF THE DAIRY INDUSTRY

The dairy industry continues as one of the most important branches of agriculture in Wisconsin. The changes which have occurred during the period 1909-1915, show that certain lines, especially cheese, have increased much more rapidly than others. Yet market milk and the output of condenseries as well as that of but-

ter plants have made steady progress. The 1915 statistics for cheese, butter, condensed milk and other dairy products produced at the factories were furnished from blanks filled out either by operators of the factory or by representatives of this department.

The figures used for cheese and butter produced on the farms were taken from the report of 1909. The value of milk produced other than that furnished cheese and butter factories and condenseries was estimated as the amount used for family consumption by the total population of the state, which population is taken as 2,500,350 (the figures reported by the United States census bureau July 1, 1916.) In estimating this amount one pint per day per capita was used and the milk valued at one and one-half cents per pint.

In obtaining the estimates for the value of milk and cream shipped to Chicago, St. Paul, Minneapolis, Dubuque and other points, the figures given in the report of 1909 were increased 18%, being the per cent of increase in factory butter production for that period.

Skim milk was valued at one-half as much per one hundred pounds as shelled corn is per bushel, and the value of whey at one-half of skim milk. The value of corn was placed at 73 cents per bushel. The total of all of these figures amounted to \$110,242,-382.75. With the usual increase in production and the advanced price paid for dairy products in 1917, the \$150,000,000 mark will be reached for this year.

The production of cheese in 1915 was 234,929,037 pounds, valued at nearly \$33,000,000. This was an increase of nearly ninety million pounds for the six year period 1909-1915. With 435 additional cheese factories in operation in 1916 as compared with 1910, the increase is not alone due to the development of the industry in the northern part of the state, but increased production in the older regions as well.

The production of butter in factories was reported in 1909 to be 105,307,356 pounds and in 1915, 124,636,071 pounds, an increase of nearly twenty million pounds, the total value of the production being \$34,744,774.51.

Wisconsin Dairy Statistics for The Year 1915

	Pounds	Received for or valued at
Cheese produced in factories.....	234,929,037	\$32,855,922.53
Other cheese factory products sold.....		636,728.16
Cheese produced on farms.....	1,433,702	90,118.00
Butter produced in factories.....	124,636,071	34,744,774.51
Other butter factory products sold.....		1,307,079.27
Farm made butter.....	7,962,480	1,750,948.00
Products of milk condenseries.....	396,607,532	9,138,520.79
Milk produced other than that furnished cheese and butter factories or condenseries.....		13,689,416.25
Estimated value of milk and cream shipped to Chicago, St. Paul, Minneapolis, Dubuque and other points outside Wis- consin		3,062,100.00
Skim milk		8,973,797.11
Whey		3,382,978.13
Estimated value of milk and cream, not otherwise re- ported, used in manufacturing of ice cream.....		630,000.00
Total.....		\$110,242,382.75

WHEY BUTTER

The law enacted by the legislature of 1917 requiring that butter made from whey cream shall have the words "Whey Butter" conspicuously stamped, labeled, or marked in plain Gothic letters at least three-eighths of an inch square, so that the words cannot be easily defaced, upon two sides of each and every tub, firkin, box or package containing such butter, was legislation which offered protection to the industry for the benefit of the makers who do their work properly. It will work no hardship except on the person, firm or corporation who desires to place on the market an article under an assumed name. It is within the power of every cheese maker of Wisconsin, who produces whey cream, to offer for sale an article of food of good quality, and place whey butter upon its own merits.

THE MOISTURE LAW

One of the most important measures passed by the last session of the legislature, was that fixing the moisture standard in American or cheddar cheese. Section 4601—4a (9) (as amended by chapter 87, Laws of 1917) follows:

"Cheese is the sound, solid, and ripened product made from milk or cream by coagulating the casein thereof with rennet, pepsin, or lactic acid, with or without the addition of ripening ferments and seasoning or added coloring matter and contains, in the water-free substance, not less than fifty per cent of milk fat and cheese known as American or Cheddar cheese not more than forty per cent of moisture; except that Emmenthaler cheese, commonly known as domestic Swiss cheese, shall contain in the water-free substance not less than forty-three per cent of milk fat. * * *"

Wisconsin cheese is known for its high quality all over the world. However, during the last few years cheese makers and operators injured the quality by incorporating into the cheese too much water, in order to obtain the yield, and this factor was a serious detriment to the Wisconsin cheese industry. The situation became such that legislation was needed to standardize the moisture in cheese. Although the law has been in effect only a short time, great improvement is already apparent. Other states followed Wisconsin in the adoption of the moisture standard. New York passed the thirty-nine per cent moisture law, and the federal government adopted a like measure. Through the moisture law unfair competition is eliminated, and I consider it one of the most important laws in the interest of the great dairy industry passed by the legislature of 1917.

EGG SITUATION

A conference was called at Madison, June 7 and 8, with merchants and firms engaged in the buying and selling of eggs. The meeting was called to discuss ways and means to stop the enormous waste of eggs. It has been estimated that the value of the annual

production of eggs in Wisconsin amounts to ten million dollars. It has also been estimated that there is a loss of approximately twenty per cent, or two million dollars, the loss being caused by the improper methods of handling, storing and marketing the eggs. At this conference the department was assured of the entire cooperation of every dealer present in the enforcement of our egg laws.

I will also mention that the department was instrumental in the organization at that time of the Wisconsin Poultry and Egg Dealers Association. This association was organized so that a combined effort could be made to improve the egg situation in Wisconsin. The department carried on an educational campaign throughout the state. One hundred sixty-five cities and villages were visited by our inspectors. Posters were distributed and placed in hundreds of stores, commission houses, creameries and cheese factories. These posters served to bring before the producers certain facts relative to the production, handling, storing and candling of eggs, as well as serving as a warning to those who practiced the selling of bad eggs. Letters were also sent to merchants buying and selling eggs, calling their attention to the law governing the sale of eggs. Merchants were urged to buy eggs on the "loss off" basis, that is, candling each egg when they come into the store, and rejecting the bad ones before they get into the channels of trade. It was found that few merchants knew how to candle eggs properly. Instructions were given in the candling of eggs, and instructions were also given in how to make candling devices. In this way hundreds of dollars were saved to the merchants. Publicity was given in newspapers and periodicals regarding egg production, handling, storing and candling. Egg dealers and merchants have told us repeatedly that this egg work was the most important work that had been done for years and that the quality of the eggs they received improved materially, thereby effecting a saving to producers and consumers alike, for the conservation of eggs means increased food supply.

SANITARY CONDITIONS

The sanitary conditions in grocery stores, meat markets, bakeries, confectioneries and bottling plants throughout the state show more improvement than in any year previous, which is very gratifying to the department. From the report of one of our inspectors we take the following:

"I do not find nearly so many unclean, yes, filthy tools and machines in the butcher shops. I do not find half as many foods exposed to filth, flies, dust and other contamination. I find cleaner floors, shelves, food bins, cellars, toilets and backyards. I find the walk display much improved. I find fewer unclean soda fountains and soda fountain equipments. The conditions in bottling factories have also improved. Together with these improvements I find a very good cooperative spirit among the dealers. Practically all are eager to observe suggestions and improve conditions."

Never before was there such a general, uniform method of pro-

cedure in making sanitary inspections of stores, meat markets, bakeries, confectioneries, soda fountains, bottling factories, etc., as there was inaugurated in the past year. We established a uniformity of ideas as to the standard of cleanliness and sanitation. This uniformity of ideas in making inspections resulted in much good.

FOOD AND DRUGS

The food and drug work has been carried on just as effectively and judiciously as ever before. Chemical preservatives and foods deleterious to health are practically eliminated in Wisconsin. However, owing to the high price of our food products, and to the abnormal condition which exists at the present time, the temptation to substitute cheaper articles is greater. This department is doing its utmost and is making every effort possible to prohibit the substitution and adulteration of food products.

During the past year injunction proceedings were brought in the United States District Court for the western district of Wisconsin against the dairy and food commissioner by the Curtice Brothers Company of Rochester, New York, enjoining him from enforcing the law prohibiting the use of benzoate of soda in jams, jellies, catsup, and condimental sauces. This case was decided in favor of the plaintiff, was appealed to the United States supreme court and a decision in this case is hoped for shortly. Should the United States supreme court uphold the decision of the lower court it would not only affect the products mentioned in the injunction, but would have sweeping effect in destroying the police power of every state.

In concluding: this department was called upon by various large cities of our state to cooperate with the local health department in cleaning up certain conditions that existed at the time, particularly in cases where the local health officer felt that he needed help in matters that were outside his jurisdiction. Considerable time was spent in this way with the Milwaukee department of health. They have called upon us several times, owing to the fact that they could not reach the party or parties sending unwholesome products into the city. The department received many flattering expressions of praise and appreciation for the promptness and thoroughness with which this work was done.

WEIGHTS AND MEASURES

Much good work has been accomplished by the weights and measures department this year. The per cent of inaccurate weights and measures appliances has gradually decreased from year to year. However, in order to accomplish the best results we must have the cooperation of every purchaser throughout the state. The fact that a state or city maintains a department providing for the inspection of weights and measures often gives to the purchaser a false sense of security. He is usually content to take the easiest course and

shifts the responsibility of getting an honest return for his money to the local weights and measures inspector. Unless a purchaser checks up on the goods he receives there is little hope of bringing about a complete reform in this matter. No state or city maintains a force large enough to cover all establishments. A weights and measures official may prosecute here and there, but, after all, the purchasing public is more powerful than any judge on the bench. The way to eliminate the dishonest merchant and put him out of business is for the public to patronize only those merchants who are honest and reliable.

Inasmuch as scales gradually wear out, the per cent of inaccuracies will never fall much below five per cent of the total number tested. In many instances scales which have been found inaccurate have been corrected or adjusted by the inspector. It must be borne in mind that these scales were not weighing correctly at the time of the inspection.

CHANGES IN TOLERANCES AND SPECIFICATIONS FOR WEIGHING AND MEASURING APPLIANCES

But few changes in tolerances and specifications for weighing and measuring appliances have been made during the past year. In the month of September, 1916, the state superintendent of weights and measures granted a hearing to members of the Wisconsin Hardware Dealers' Association at which time specifications for family scales were discussed. It was contended that the specification requiring family scales to be of the same degree of accuracy as commercial scales practically prohibited their sale in the state. The following specification was adopted:

"Spring balances constructed with a commodity plate, pan or scoop above the dial, and commonly known as the family type of dial spring scale, shall have permanently marked on the dial and opposite side of scale in letters not less than 3/16 inch in height the words 'Family Scale! Not legal in trade' or a similar and suitable inscription approved by this department.

This type of scale, when marked as above shall not be allowed in trade, but for family use only, and the tolerances allowed in excess or deficiency shall not be greater than the values given in the following table:"

Manufacturers' Tolerances for Family Scales

Load	Tolerance	Added tolerance for shift test at half capacity	Load	Tolerance	Added tolerance for shift test at half capacity
Pounds	Ounces	Ounces	Pounds	Ounces	Ounces
1	$\frac{1}{4}$	$\frac{1}{4}$	9	$\frac{3}{4}$	$\frac{3}{4}$
2	$\frac{1}{4}$	$\frac{1}{4}$	10	$\frac{3}{4}$	$\frac{3}{4}$
3	$\frac{1}{4}$	$\frac{1}{4}$	11	1	$\frac{1}{2}$
4	$\frac{1}{2}$	$\frac{1}{4}$	12	1	$\frac{1}{2}$
5	$\frac{1}{2}$	$\frac{1}{4}$	15	1	$\frac{1}{2}$
6	$\frac{1}{2}$	$\frac{3}{4}$	20	$1\frac{1}{2}$	$\frac{1}{2}$
7	$\frac{1}{2}$	$\frac{3}{4}$	25	$1\frac{1}{2}$	$\frac{1}{2}$

The enforcement of the specifications and tolerances for prescription graduates which were published in the 1916 report of the dairy and food commissioner were temporarily suspended during the year. Owing to the unusual conditions existing on account of the war it was found practically impossible for manufacturers of glass graduates to adjust themselves to the new specifications. As soon as this adjustment is made dealers will be informed of this fact.

Further details in regard to the weights and measures work will be found in the report of Fred P. Downing, chief inspector of weights and measures.

LAWS ENACTED BY THE LEGISLATURE OF 1917

The following laws coming under the jurisdiction of this department were passed during the last session of legislature. These laws became effective upon passage and publication except where otherwise stated:

1. A law licensing cold storage warehouses and regulating the sanitary condition of the same. This law also required that a record be kept by each cold storage warehouse of the number of articles of food coming under this act which are received and withdrawn from cold storage and that a monthly report of the same be sent to the office of the dairy and food commissioner. It also limits the time of storage. This law takes effect on September 1, 1917.

2. A law transferring the licensing and inspection of the bakeries and confectioneries to this department. It also required the payment of a fee for such a license.

3. A law placing soda water bottlers under a license and requiring the payment of a fee for such license. It also provided for the making of rules and regulations by the dairy and food commissioner pertaining to the proper handling and storing of such beverages and the construction and sanitary condition of buildings and to the proper cleaning and sterilizing of all machinery, bottles or other containers used in or about the factory and all containers in which the product is sold. The dairy and food commissioner was also given authority to prescribe such standards of purity for all ingredients used in the manufacture of such beverages as will insure a pure and unadulterated product. This law becomes effective January 1, 1918.

4. A law providing for the labeling of butter manufactured in whole or in part from whey cream. The law provides that butter so manufactured shall be stamped with the words "Whey Butter", the letters of which shall be not less than three-eighths of an inch square and it further provides that this stamp shall be stamped upon two sides of each tub, firkin, box or package containing said whey butter.

5. A law fixing the per cent of moisture in American or Cheddar cheese at 40 per cent.

6. A law providing for the appointment of special dairy and food inspectors by the dairy and food commissioner for any factory or plant which buys or receives milk or cream to be manufactured into

butter or cheese, or to be condensed, or to be sold as market milk or cream, or for a group of such factories or plants, or for any organization organized for the purpose of selling butter or cheese, upon petition therefore signed by more than two-thirds of the regular patrons of such factory or plant or by the officers of the organization representing such group of factories or plants and upon receiving satisfactory proof that the special dairy and food inspectors will be compensated in full for all services rendered and traveling expenses incurred upon and pursuant to such appointment, by such patrons making such petition.

7. An amendment to section 1410aa making a penalty for failure to return the statistical report provided for in section 1410aa.

8. An amendment to section 1410b—2 requiring but one factory license where both butter and cheese are manufactured at the same plant. This becomes effective January 1, 1918.

9. A law prohibiting the use of any trading stamp, token, ticket, bond or other similar device which shall entitle the purchaser receiving the same to procure any goods, wares, merchandise, privilege, or thing of value in exchange for any such trading stamp, token, ticket, bond or other similar device except that any manufacturer, packer or dealer may issue any slip, ticket, or check with the sale of any goods, wares, or merchandise, which slip, ticket or check shall bear upon its face a stated cash value and shall be redeemable only in cash for the amount stated thereon upon presentation in amounts aggregating 25 cents or over of redemption value and only by the person, firm or corporation issuing the same. This law becomes effective January 1, 1918.

10. An amendment to section 1667 providing that when any commodity is sold by weight, it shall be understood to mean the net weight.

11. An amendment to section 4432, makes it a misdemeanor to take or attempt to take more than the quantity represented, when the weight, measure or weighing or measuring device by means of which the amount of commodity is determined is furnished by the buyer.

12. An amendment to section 1661 extending the duties of sealers of weights and measures, giving to them jurisdiction over all weighing and measuring appliances with the exception of gas, water and electric meters and with the exception of the grain scales of Superior.

13. A law making it the duty of the dairy and food inspectors in the course of the performance of their duties to make such reasonable investigations as may be requested by the Secretary of State to ascertain violations of certain laws regulating the use of automobiles and motor cycles.

I take this opportunity of expressing my deep appreciation to all of the employees of this department for their untiring efforts, support and cooperation and for the many courtesies extended, all of which have helped to make the work of the department so successful.

CONVICTIONS.

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1916				
July 5	Sam Chalmson, Shawano.....	Offering and exposing for sale meat under dirty and filthy conditions.....	A. N. Hazeltine, Shawano.....	\$25 and costs
July 6	Oscar Altpeter, Baraboo.....	Selling of a misbranded article of food.....	Adolph Andro, Baraboo.....	\$10 and costs
July 14	Herman Frien, Bonduel.....	Preparing and manufacturing for sale meat under unclean, unhealthful and unsanitary conditions.....	Chris. Bonnin, Bonduel.....	\$25 and costs
July 15	C. Wartmann, Wausau.....	Manufacturing and preparing for sale meat and meat products under unclean, unhealthful and unsanitary conditions.....	Louis Marchetti, Wausau.....	\$25 and costs
July 19	Herman W. Butzke, Cedarburg, R. 2.....	Selling of short weight butter.....	Henry Rolfs, West Bend.....	\$25 and costs
July 25	Andrew Goetzelman, Bloomington.....	Manufacturing and preparing for sale meat and meat products under unclean, unhealthful and unsanitary conditions and the selling of tainted meats.....		
Aug. 8	M. J. Christensen, Luck.....	Selling less than the quantity represented.....	C. W. Burrows, Lancaster.....	\$25 and costs
Aug. 9	Adolf Gurtner, Beaver Dam.....	Maintaining cheese factory premises and utensils in an unsanitary condition.....	John J. Tuttle, Balsam Lake.....	\$25 and costs
Aug. 14	H. A. Casper, Chippewa Falls.....	Selling of a misbranded article of food.....	I. L. Miltgen, Beaver Dam.....	\$25 and costs
Aug. 15	Edward Welch, Prescott.....	Selling adulterated spirit of camphor.....	F. A. Smith, Chippewa Falls.....	\$25 and costs
Aug. 15	Lemmer Drug Co., Spooner.....	Selling adulterated tincture of iodine.....	C. Fenton, Elsworth.....	\$25 and costs
Aug. 16	Oscar H. Schreiber, Underhill.....	Maintaining cheese factory premises and utensils in an unsanitary condition.....	Andrew Ryan, Shell Lake.....	\$25 and costs
Aug. 19	D. F. Thatcher, Dallas.....	Selling adulterated tincture of iodine.....	Marion Wescott, Shawano.....	\$25
Aug. 22	Collins Drug Co., Blue River.....	Selling adulterated tincture of iodine.....	J. W. Sodeberg, Barron.....	\$25 and costs
Aug. 26	Hagemester Brewing Co., Stevens Point.....	Selling adulterated tincture of iodine.....	Chas. Burrows, Lancaster.....	\$25
Aug. 31	Menzel & Henriksen, Kenosha.....	Selling a misbranded article of food.....	G. L. Parks, Stevens Point.....	\$25 and costs
Sept. 6	Herman Herzberg, Arpin.....	Offering for sale tainted meat and manufacturing food under unsanitary conditions.....	O. C. Randall, Kenosha.....	\$25 and costs
Sept. 27	Jon. Jetzer, Sheboygan.....	Delivering adulterated milk to a cheese factory.....	Frank W. Calkins, Grand Rapids.....	\$25 and costs
		Manufacturing and storing food products under unsanitary conditions.....	D. Phelan, Sheboygan.....	\$25 and costs

Sept. 27	Jewett & Oasterline, Iron River.	Selling adulterated tincture of iodine.	Geo. A. Calder, Washburn.	\$25 and costs
Sept. 28	Hanson & Sweitzer, Racine.	Manufacturing meat products with unclean machinery	Wm. Smiedling, Racine.	\$25 and costs
Sept. 28	Albertson & Larson, Racine.	Selling a food product containing sulphurous acid and sulphites.	Wm. Smiedling, Racine.	\$25 and costs
Sept. 29	C. J. Nelson, Racine.	Selling adulterated boiled linseed oil.	Wm. Smiedling, Racine.	\$25 and costs
Oct. 3	R. J. Strauss, Marshfield.	Selling adulterated tincture of iodine.	Hugo Wegener, Marshfield.	\$25 and costs
Oct. 3	H. Hackbarth, Mosinee.	Selling adulterated tincture of iodine.	Louis Marchetti, Wausau.	\$25
Oct. 4	Albert Braunschweig, Watertown.	Maintaining cheese factory premises and utensils in an unsanitary condition.	Ferdinand Schmutzler, Watertown.	\$25 and costs
Oct. 4	Alb. Burkhardt, Sheboygan Falls.	Selling adulterated milk.	Adam Trester, Sheboygan.	\$25 and costs
Oct. 6	Ed. Everett Austin, Richland Center.	Maintaining cheese factory apparatus and utensils in an unclean and filthy condition.	— Curtis, Richland Center.	\$25 and costs
Oct. 10	Ben Krieser, Morrison.	Maintaining cheese factory premises and utensils in an unsanitary condition.	N. J. Monahan, Green Bay.	\$25
Oct. 12	Abel Harding, Chili.	Delivering adulterated milk to a cheese factory.	W. A. Campman, Neillsville.	\$25 and costs
Oct. 12	Harland F. Young, Wyoming.	Maintaining cheese factory premises, apparatus and utensils in an unclean and filthy condition.		
Oct. 19	H. W. Sherman, Lake Geneva.	Selling less than the quantity represented.	T. H. Arthur, Dodgeville.	\$25 and costs
Oct. 23	John Sasman, Black Creek.	Selling adulterated milk.	R. D. Short, Lake Geneva.	Fine suspended on payment of costs
Oct. 31	Louis Shevy, Jr., Coleman.	Making cheese without a cheese maker's permit or license.	A. M. Spencer, Appleton.	\$25 and costs
Nov. 6	L. R. Luebke, Oshkosh.	Preparing for sale dairy products and not protecting them from flies.	R. C. Smith, Oconto Falls.	\$25
Nov. 9	C. E. Hoffman, Port Washington.	Selling adulterated tincture of iodine.	A. H. Goss, Oshkosh.	Fine suspended on payment of costs
Nov. 9	E. F. Flintrop, West Allis.	Selling adulterated tincture of iodine.	A. H. Kuhl, Port Washington.	\$25 and costs
Nov. 17	Louis F. Phillips, Viola.	Maintaining premises, apparatus and utensils in an unclean and filthy condition.	Geo. C. Page, Milwaukee.	Fine remitted on payment of costs
Nov. 21	A. Timm, Burlington.	Selling sausage containing a chemical preservative.	Hon. Curtis, Richland Center.	\$25 and costs
Nov. 21	Wells & Garvin, Ashland.	Selling chopped meat containing sulphurous acid and sulphites.	J. F. Lyons, Elkhorn.	\$25 and costs
Nov. 21	Wm. Schreiber, Plymouth.	Maintaining a meat market in an unsanitary condition.	John Garvin, Ashland.	\$25 and costs
Dec. 2	Aug. Besserdich, Plymouth.	Selling short weight cranberries.	A. Trester, Sheboygan.	\$25
Dec. 4	Jos. Krail, Fond du Lac.	Maintaining a meat market in an unsanitary condition.	Reinhardt, Plymouth.	Fine remitted
Dec. 4	Wickert & Kaiser, Fond du Lac.	Maintaining a meat market in an unsanitary condition.	W. J. Justen, Fond du Lac.	\$25 and costs
			W. J. Justen, Fond du Lac.	\$25 and costs

CONVICTIONS—Continued.

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
Dec. 12	Emily Grote, Mauston.....	Selling adulterated tincture of iodine.....	F. E. Hurd, New Lisbon.....	\$25
Dec. 12	Chas. B. Curran, Eau Claire.....	Selling adulterated tincture of iodine.....	Henry McBain, Eau Claire.....	\$25 and costs
Dec. 12	Wallace L. Nichols, Eau Claire.....	Selling adulterated spirit of camphor.....	Henry McBain, Eau Claire.....	\$25 and costs
Dec. 12	Fred H. Gladby, Eau Claire.....	Selling adulterated spirit of camphor.....	Henry McBain, Eau Claire.....	\$25 and costs
Dec. 13	Mason Merc. Co., Mason.....	Selling adulterated spirit of camphor.....	Geo. A. Calder, Washburn.....	\$25 and costs
Dec. 13	Kradwell Drug Co., Racine.....	Selling adulterated tincture of iodine.....	Wm. Smieding, Racine.....	\$25 and costs
Dec. 15	John Gerrits, Appleton.....	Selling adulterated alcohol.....	A. M. Spencer, Appleton.....	\$25 and costs
Dec. 15	Arthur Healy, Mukwonago.....	Offering for sale adulterated milk.....	James E. Thomas, Waukesha.....	\$50 and costs
Dec. 16	Fred Larson, Cumberland.....	Having in possession with intent to sell adulterated cream.....	A. F. Wright, Cumberland.....	\$25 and costs
Dec. 16	Aug. Kowalkowski, Embarras.....	Selling adulterated milk.....	O. H. Day, New London.....	Fine suspended until Jan. 16, on payment of costs
Dec. 18	C. Carpenter Roberts, Evansville.....	Delivering coal without a delivery ticket.....	H. L. Maxfield, Janesville.....	Fine suspended on payment of costs
Dec. 18	A. W. Grimmmer, Mauston.....	Selling adulterated tincture of iodine.....	DeLas Barrows, Mauston.....	\$25
Dec. 18	Brunzell & Fellows, Evansville.....	Delivering coal without a delivery ticket.....	H. L. Maxfield, Janesville.....	Fine suspended on payment of costs
Dec. 22	August Mellus, Oconomowoc.....	Offering for sale adulterated milk.....	T. T. Cronin, Oconomowoc.....	\$25 and costs
Dec. 26	Chas. Beyer, Shiocton.....	Selling adulterated milk.....	A. M. Spencer, Appleton.....	\$25 and costs
Dec. 26	Chas. W. Sulzger, Shiocton.....	Selling adulterated milk.....	A. M. Spencer, Appleton.....	\$25 and costs
Dec. 27	A. T. McGeorge, Camron.....	Selling an article of food containing bor'ic acid.....	Henry Radernacher, Barron.....	\$25 and costs
Dec. 27	Davis & Viau, Beloit.....	Maintaining store and market in an unsanitary condition.....	C. B. Clark, Beloit.....	\$25 and costs
Dec. 29	C. Russell, Racine.....	Selling an article of food containing bor'ic acid.....	Wm. Smieding, Racine.....	\$25 and costs
1917				
Jan. 6	Jacob Miller, Hortonville.....	Using a condemned scale and unsealed weights.....	A. M. Spencer, Appleton.....	\$25 and costs
Jan. 8	Wm. Cary, Calamine.....	Selling adulterated milk.....	D. C. O'tes, Darlington.....	\$25 and costs
Jan. 9	Wm. H. Rogers, Wauwatosa.....	Having in possession with intent to sell unsanitary milk.....	Geo. E. Page, Milwaukee.....	\$25 and costs
Jan. 10	John Kopp, North Milwaukee.....	Selling butter produced from unsanitary milk.....	Geo. E. Page, Milwaukee.....	\$25 and costs
Jan. 15	Thos. McGavock, Beloit.....	Maintaining store and market in an unsanitary condition.....	C. B. Clark, Beloit.....	\$25 and costs
Jan. 16	Anton Theine, Menomonee Falls.....	Having in possession with intent to sell unsanitary milk.....	James E. Thomas, Waukesha.....	\$25 and costs

Jan. 16	Walter Kipper, Menomonee Falls	Having in possession with intent to sell	James E. Thomas, Waukesha	\$25 and costs
Jan. 16	Edward Kieffer, Menomonee Falls	Having in possession with intent to sell	James E. Thomas, Waukesha	\$25 and costs
Jan. 16	Gust Varakalas, Beloit	Maintaining meat market in an unsanitary condition	C. B. Clark, Beloit	\$25 and costs
Jan. 16	A. E. Olle, Kenosha	Selling an article of food containing boracic acid	C. E. Randall, Kenosha	\$25 and costs
Jan. 16	Dan Ennis, Beloit	Maintaining store and meat market in an unsanitary condition	C. B. Clark, Beloit	\$25 and costs
Jan. 18	A. Spiegel Co., Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	Harris Coleman, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	W. F. Kaiser, Milwaukee	Selling adulterated spirit of camphor	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	Ed Kettler, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	H. F. Schwarz, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	H. S. Kopf, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	S. D. Berg, Milwaukee	Selling adulterated spirit of camphor	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	Wright Drug Co., Milwaukee	Selling adulterated spirit of camphor	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	Prentice Drug Co., Milwaukee	Selling adulterated spirit of camphor	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	A. C. Schroeder, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	Louis H. Kressin, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	W. J. Scheitinger, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	J. Goldberg, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	Jos. Gaudynski, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	Wm. Schneider, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	Adeline Burns, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs
Jan. 18	Hugo Wussow, Milwaukee	Selling adulterated tincture of iodine	J. A. Hedding, Milwaukee	Sentence suspended on payment of costs

CONVICTIONS—Concluded.

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
Jan. 18	Geo. A. Diller, Milwaukee.....	Selling adulterated tincture of iodine.....	J. A. Hedding, Milwaukee.....	Sentence suspended on payment of costs
Jan. 23	E. J. Burnside, Ripon.....	Selling adulterated tincture of iodine.....	Roy Reed, Ripon.....	\$25 and costs
Jan. 23	O. Schallern, Ripon.....	Selling adulterated tincture of iodine.....	Roy Reed, Ripon.....	\$25 and costs
Jan. 24	R. O. Schoen, Markesan.....	Selling adulterated spirit of camphor.....	H. E. Megow, Princeton.....	\$25 and costs
Jan. 24	Neumann & Hayer, Berlin.....	Selling adulterated tincture of iodine.....	H. E. Megow, Princeton.....	\$25 and costs
Jan. 31	Chas. Allain, Unity.....	Delivering adulterated milk to a cheese factory.....	Judge Marchetti, Wausau.....	\$25 and costs
Jan. 31	Chas. & Gust. Reimer, Green Bay.....	Maintaining meat market in an unsanitary condition.....	N. J. Monahan, Green Bay.....	\$25 and costs
Feb. 2	George Lowe, Madison.....	Selling less than the quantity represented.....	Aug. O. Hoppmann, Madison.....	\$25 and costs
Feb. 5	Phil Reis, Green Bay.....	Maintaining meat market in an unsanitary condition.....	N. J. Monahan, Green Bay.....	\$25 and costs
Feb. 6	C. H. Wood, Grand Rapids.....	Delivering and selling adulterated milk.....	Frank W. Calkins, Grand Rapids.....	\$25 and costs
Feb. 12	E. F. Rosenberg, Colfax.....	Offering for sale adulterated cream.....	Peter Clark, Menomonee.....	\$25 and costs
Feb. 14	E. F. Hobbrook, Cameron.....	Delivering coal without a delivery ticket.....	J. W. Soderberg, Barron.....	\$1.00 and costs
Mar. 5	Conrad Christiansen, Green Bay.....	Selling hamburger containing sulphurous acid and sulphites.....	N. J. Monahan, Green Bay.....	\$25 and costs
Mar. 6	Karl F. Stupp, Janesville.....	Selling adulterated lard in misbranded tins.....	H. L. Maxfield, Janesville.....	\$25 and costs
Mar. 13	J. S. Mack, Lomira.....	Maintaining meat market in an unsanitary condition.....	Ed Sauerherberg, Mayville.....	\$25 and costs
Mar. 14	Chas. Sheek, Random Lake.....	Selling adulterated milk.....	Adam Trester, Sheboygan.....	\$25 and costs
Mar. 22	H. Dale, Galesville.....	Selling unsanitary cream.....	Edw. Gardner, Galesville.....	Sentence suspended on payment of costs
April 3	William Illian, Adell.....	Selling adulterated milk.....	Adam Trester, Sheboygan.....	\$25 and costs
April 5	Wm. Walter, Hurley.....	Manufacturing and preparing for sale food under unclean and filthy conditions.....	J. C. Flanagan, Horley.....	\$25
April 5	Henry Meuret, Wausau.....	Selling adulterated cream.....	R. N. Larner, Wausau.....	\$25 and costs
April 6	Edward Brand, Palmyra.....	Selling flour that was misbranded.....	Giles Hibbard, Ft. Atkinson.....	\$25 and costs
April 10	Wm. Haeger, Merrill.....	Selling adulterated milk.....	M. C. Porter, Merrill.....	\$25 and costs
April 19	Frank Bibehausen, Shawano.....	Storing food products not protected from filth and contamination.....	H. O. Buth, Shawano.....	\$25 and costs
April 20	Ed. Graney, Lancaster.....	Selling adulterated cream.....	C. W. Burrows, Lancaster.....	\$25 and costs
April 27	Geo. Burnmeister, Waukesha.....	Selling adulterated milk.....	James E. Thomas, Waukesha.....	Fine remitted pending probation period

April 27	Roy Brink, Waukesha.....	Selling milk in misbranded bottle.....	James E. Thomas, Waukesha.....	Sentence suspended pending compliance with law
April 27	Clifford Stickle, Mukwonago.....	Manufacturing and storing foods under unsanitary conditions.....	James E. Thomas, Waukesha.....	\$25 and costs
April 30	Joe Patrie, Rozellville.....	Delivering adulterated milk to a cheese factory.....	R. N. Lerner, Wausau.....	\$25
May 1	H. H. Raymond, Rozellville.....	Delivering adulterated milk to a cheese factory.....	R. N. Lerner, Wausau.....	\$25
May 3	James Jensen, Ashland.....	Offering for sale adulterated cream.....	John Garvin, Ashland.....	\$25
May 12	Chas. Luetzow, Wauwatosa.....	Selling meat containing sulphurous acid and sulphites.....	Geo. C. Page, Milwaukee.....	\$25 and costs
May 23	August Hoppe, Port Washington.....	Selling adulterated milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
May 23	Henry Schaefer, Grafton.....	Selling unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
May 23	August Berger, Port Washington.....	Selling unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
May 23	Julius Bieler, Port Washington.....	Selling unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
May 23	Fred Phillips, Grafton.....	Selling unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
May 23	Mat Spies, Port Washington.....	Selling unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
May 23	Henry Griesar, Grafton.....	Selling unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
May 23	Fred Kohlwey, Grafton.....	Selling unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
May 23	George Gratz, Port Washington.....	Receiving unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
May 23	Chas. Heller, Grafton.....	Receiving unsanitary milk and manufac- turing same into food.....	A. H. Kuhl, Port Washington.....	Fine suspended on payment of costs
May 23	Ed. M. Michel, Grafton.....	Receiving unsanitary milk and manufac- turing same into food.....	A. H. Kuhl, Port Washington.....	Fine suspended on payment of costs
May 23	Robt. Clausen, Grafton.....	Offering for sale unsanitary cream.....	A. H. Kuhl, Port Washington.....	\$25 and costs
June 4	T. H. Costello, Richland Center.....	Preparing food and not protecting it from filth and unclean conditions.....	A. H. Kuhl, Port Washington.....	\$25 and costs
June 12	John N. Jacoby, Belgium.....	Maintaining a cheese factory in an unsani- tary condition.....	W. F. J. Fogo, Richland Center.....	\$25 and costs
June 19	John Conrad, Grafton.....	Selling unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
June 20	Geo. Benz, North Milwaukee.....	Maintaining premises and utensils in an unsanitary condition.....	A. H. Kuhl, Port Washington.....	\$25 and costs
June 25	J. W. Gates, Ft. Atkinson.....	Selling adulterated tincture of iodine.....	G. O. C. Page, Milwaukee.....	\$25 and costs
June 26	Chas. Ford, Genoa Junction.....	Selling adulterated tincture of iodine.....	Giles Hibbard, Ft. Atkinson.....	\$10 and costs
June 26	E. W. Kepfinger, Centuria.....	Selling adulterated boiled linsed oil.....	J. Lyon, Elkhorn.....	\$15 of fine remitted
June 27	Alfred Swerkstorff, Luck.....	Selling adulterated boiled linsed oil.....	J. J. Tuttle, Balsam Lake.....	\$25 and costs
June 29	Edward Zuelstorff, Saukville.....	Selling unsanitary milk.....	J. J. Tuttle, Balsam Lake.....	\$25 and costs
June 29	Henry Hoelt, Jr., Saukville.....	Selling unsanitary milk.....	A. H. Kuhl, Port Washington.....	\$25 and costs
June 29	E. C. Liehte, South Milwaukee.....	Selling adulterated tincture of iodine.....	A. H. Kuhl, Port Washington.....	\$25 and costs
June 29	John Jacques, Port Washington.....	Selling unsanitary milk.....	Geo. C. Page, Milwaukee.....	\$25 and costs

DISBURSEMENTS**For Year Ending June 30, 1917.**

Weigle, Geo. J., commissioner sal. and exp-----	\$3,175.41
Aderhold, E. L., asst. commissioner, sal. and exp-----	3,088.086
Lee, C. E., asst. commissioner and dairy specialist, sal. and exp-----	2,776.52
Norton, F. Q., secretary-----	359.34
Backeberg, Nora, clerk-----	60.64
Beckwith, Chauncey, inspector, sal. and exp-----	2,542.87
Boettcher, J. E., inspector, sal. and exp-----	2,701.74
Bornheimer, H. L., inspector, sal. and exp-----	1,592.20
Brannon, W. A., assistant chemist, sal. and exp-----	1,722.78
Brennan, Leo, junior sealer of weights and measurers--	510.00
Cannon, J. D., inspector, sal. and exp-----	2,516.94
Cook, S. B., inspector, sal. and exp-----	2,420.37
Downing, F. P., chief inspector of weights and meas- ures, sal. and exp-----	2,319.01
Dufner, S. J., inspector, sal. and exp-----	2,575.76
Eigenberger, George, inspector, sal. and exp-----	2,430.15
Findorff, Louena, stenographer and bookkeeper-----	510.97
Fischer, Richard, consulting director chemical labora- tory-----	600.00
Geidel, Carl, bacteriological chemist-----	912.01
Hahm, Bertha, stenographer-----	495.96
Hanson, F. S., inspector, sal. and exp-----	697.32
Hass, B. A., inspector, sal. and exp-----	2,421.08
Hosman, D. F., assistant chemist-----	250.00
Howlett, I. R., assistant chemist-----	1,400.00
Klueter, Harry, chemist, sal. and exp-----	2,380.16
Kramer, W. J., inspector, sal. and exp-----	2,096.00
Lehnherr, Jacob, inspector, sal. and exp-----	2,521.55
Linzmeyer, J. E., inspector, sal. and exp-----	1,580.93
Marty, Fred, inspector, sal. and exp-----	2,366.18
McLaughlin, E. Joy, clerk-----	27.50
Nebel, Walter, assistant chemist-----	50.00
Nerdrum, Ruth, stenographer-----	896.25
Neubauer, Agnes, stenographer-----	593.47
Schwenker, Adelaide, clerk-----	196.00
Southard, R. B., inspector, sal. and exp-----	2,590.95
Sterns, W. P., inspector, sal. and exp-----	2,393.16
Thomas, E. D., stenographer-----	551.61
Tormey, Julia, clerk-----	51.08
Van Duser, James, inspector, sal. and exp-----	2,290.77
Voight, W. A., inspector, sal. and exp-----	2,089.50
Walter, M. L., stenographer-----	1,150.00
Warner, George, inspector, sal. and exp-----	2,269.89
Cantwell Printing Co., printing-----	588.25
Democrat Printing Co., printing-----	446.25
Insurance-----	22.80
Milwaukee Label and Seal Co., labels-----	14.02
Printing Board, paper-----	244.96
Refund, sundry persons-----	505.00
Superintendent of Public Property, postage, supplies, etc	2,068.36
Superintendent of Public Property, new apparatus-----	7.50
Tablet & Ticket Co., seals-----	20.31
Tracy & Kilgore, printing-----	15.96
Total-----	\$68,108.34

REPORT OF HARRY KLUETER, CHEMIST

HONORABLE GEORGE J. WEIGLE,
Dairy and Food Commissioner.

Dear Sir:

I hereby submit a report of the work done for the year ending June 30, 1917. During this year the total number of samples of food, drugs, linseed oils, turpentines, paint pigments and miscellaneous samples analyzed was 1,846. This shows a gain of 202 samples over the number of samples analyzed during the previous year. The nature of the samples analyzed during the previous year was very similar to the nature of the samples analyzed during this year so that I feel justified in comparing the total number of analyses and I am glad to be able to report an increased number of samples analyzed. Each class of foods will be taken up somewhat in detail later on in this report.

During this year there were also 5,354 sanitary inspections made, by one food inspector devoting full time to food work and the eight weights and measures inspectors devoting part time to food and sanitary work. An effort has been made to enlarge and systematize this work. The importance of this work has always been realized but I now feel that the merchants inspected are beginning to realize the importance of sanitation in connection with the handling of foods and the running of their places of business. A change made during this year which is a step in the right direction is the practice of leaving a duplicate inspection report of the inspection made with the merchant. This practice was never followed in previous years.

In our work we come in contact with people of various types: those who at once realize the importance of the work and welcome us in their places of business: those who are indifferent and show no interest in the inspection made and do not even feel, in some cases, that it is worth while to accompany the inspector while doing the work. Then we have those in whose places of business we are unwelcome. I feel that the first type is increasing rapidly and of course it is needless to say that the places of business of these people are usually found to be in excellent condition. Our trouble comes with the other two types of people and their places. The man who is indifferent to our inspection is also indifferent to the way in which his store is kept with respect to sanitary conditions. The man who is opposed to our inspection is usually opposed to cleanliness. Efficient sanitary inspection work requires, not only one visit by the inspector, but repeated visits. We may on the first inspec-

tion find the place very bad with respect to sanitary conditions and suggest certain necessary changes. These conditions may be the result of a number of causes and while in many cases we do not feel warranted in bringing a prosecution, still there can be no doubt of the necessity of the inspector having called and arranging for future calls. Each inspector is encouraged at the end of the inspection to talk over carefully and conscientiously with the merchant those conditions found, which in his opinion, should be changed. In some instances wilful violations of the sanitary law are found and in those cases prosecution seems justified. A typical case of this kind is the use of meat grinding and sausage stuffing machinery used in connection with the manufacture of meat products which machines are found to be in a filthy and unsanitary condition due to the fact that they were not properly cleaned each time they were used. In some cases the inspectors report finding meat grinders the condition of which would indicate that they never had been washed. In such cases prosecution seems warranted without further delay. There are, however, other things found which tend toward unsanitary conditions which can best be taken care of, not by prosecution, but by education.

It is to be remembered that many of the people found engaged in the distribution and sale of foods are so engaged without any previous knowledge or training with respect to their occupation. There has been a feeling on the part of many people that anybody could run a grocery store. This is true, perhaps, provided we do not specify the character of the store or the conditions under which it is to be operated. Then, also, personality, standards of cleanliness and other factors enter. Too little attention is given to previous training and experience in this respect. We require plumbers to be skilled in their trade. We require a certain amount of time spent as an apprentice during which time experience and knowledge are gained. This apprentice, after examination, becomes a full-fledged plumber. In other business activities periods of apprenticeship must be served but in the grocery business too little emphasis is placed on training, experience and qualifications.

It is to be hoped that organizations such as wholesale grocers of the state, the Meat Market Men's Association of the state and also the local organizations of grocymen, meat dealers and others interested in the handling of foods will, in the near future, see the necessity and wisdom of making an effort to raise the standard of the people engaged in this work. If, at some of their meetings, the problems of sanitation and pure and adulterated foods were taken up for an evening and less attention, perhaps, paid to price cutting and other similar subjects I feel that in a short time there would be established a higher standard for employes in these lines of business.

From time to time the inspectors of this department doing sanitary work should meet. I feel that such a meeting should take place at least once a year. To my mind nothing stimulates inter-

est in a man's work more than being able to talk it over with another person doing the same line of work, comparing notes as it were, finding out from one another how they bridge certain problems, getting new ideas, for instance, as to what causes a butcher's refrigerator to be unsanitary. Many other problems could be talked over and to some extent the work of sanitary inspection could be standardized. I feel that a meeting of a day or two once a year would be a good investment for the state, and that the men in the field doing this work are entitled to such meetings.

BEVERAGES

Sixty-nine samples of beverages were analyzed. In thirty-four of these samples the percentage of alcohol was determined. In the spirit of cooperation some of the local health officers of the various cities called upon us to make these determinations for the reason that they were not equipped at that time to do this work in their own laboratories. The greatest amount of work done for any one city in this connection was for the city of Superior. After a number of samples had been analyzed for Superior, arrangements were made by the Health Department of that city to carry on this work in their own laboratory. Our purpose in doing this work was mainly to assist the local health officers in equipping themselves and their laboratories to carry on this work in the future. Much of the work was in connection with the enforcement of the excise laws and work that was necessary to be done but for which the various cities had no equipment. Cooperation of this kind seems to me to be advisable.

Twenty samples of grape juice and grape cider were analyzed and found to be not standard. The form of adulteration in most of these samples was the presence of a chemical preservative added for two purposes, for its preservative action and for its bleaching effect. It seems almost impossible to purchase catawba grape juice which is free from sulphur dioxide or sulphurous acid. In many of the samples the percentage of sulphurous acid was so high that the grape juice had an after taste suggesting the old time sulphur match. By bleaching white grape juice with sulphur dioxide the product is clarified and has a brighter appearance. This same effect can be obtained by properly storing and aging the product, allowing sedimentation and clarification to take place naturally. Catawba grape juice, properly prepared, is a delicious beverage and should not be ruined by cheap commercial methods of preserving and clarifying with sulphur dioxide. Of course the presence of sulphur dioxide in these beverages makes them adulterated articles of food under our general preservative law.

BREAD

Twenty samples of bread were received and analyzed. The purpose of this work was to determine mainly the weight of the loaf of bread and the percentage of moisture. By an examination of the tabulated results of the analyses obtained on these twenty samples of bread some very interesting information can be obtained. From a comparison of the weight of the loaves of bread it will be seen that there is an absolute lack of uniformity with respect to the weight of bread. Some bakers are sending loaves of one weight to one city and loaves of a different weight to other cities all of which bread is being sold at approximately the same price. It is also to be noticed that there is considerable variation in the percentage of moisture in the various makes of bread. In collecting these samples of bread we took particular pains to prevent as far as possible the evaporation of moisture so that I feel that the percentages of moisture here reported are very nearly the true moisture content of bread as it is sold to the public. The results obtained on even this small number of samples warrants the statement that there is a necessity of standardization of a loaf of bread especially with respect to weight. Having standardization with respect to weight no doubt further standardization with respect to quality would come later. Although it is true that quality is to some extent taken care of by the consumer, unless bread possesses quality its sale and consumption will fall off, whereas if a bread of quality is produced it may sell even though the weight or quantity is unreasonably low.

DAIRY PRODUCTS

Three hundred and sixty samples of dairy products, consisting of butter, cheese, cream and milk were analyzed during this period. Sixty-two of these samples were butter. Thirty of the samples of butter were samples submitted by consumers who suspected adulteration of the products with foreign fat. In one of these thirty samples the product was found to be oleomargarine. In the remaining twenty-nine samples no evidence of foreign fat was found but the samples indicated that the butter was old, stale and in some cases even rancid. These samples were so submitted that it was impossible to test them for the percentage of fat or moisture and our work was therefore limited to determining the presence or absence of foreign fats. Thirty-two samples of butter were purchased by our inspectors on the open market and of these thirty-two seventeen were found to be not standard. Three of the samples were purchased at popcorn stands where the merchant was advertising and selling "Fresh Buttered Popcorn". These samples were found to be oleomargarine and of course popcorn sold for butter popcorn and treated with melted oleomargarine is adulterated. The remaining fourteen samples were found to be below standard in fat and of course, as would be expected, very high in moisture. Eight of the

samples were found to contain over sixteen per cent of moisture and for that reason would be classed as adulterated butter under a ruling promulgated by the Federal Department of Internal Revenue. All of these samples were not purchased directly from the manufacturers but in each case we were able to trace the product back to the manufacturer. All of these manufacturers should have been operating under a federal license for the manufacture of adulterated butter and should have been paying a tax of ten cents a pound on their product. One of the samples was found to contain only 77.23 per cent of milk fat and this sample was found to be the highest in moisture, containing approximately 18 per cent. Rumors have come to us from time to time that certain butter factories were incorporating casein in their butter, thus reducing the percentage of fat without showing excessive amounts of moisture. We have investigated several of these complaints but thus far we have been unable to find a single instance where an excessive amount of casein had been incorporated. The usual form of adulteration, namely excessive moisture, is what we always find. Seventeen samples were found to be in compliance with the legal standard for butter in this state which requires, among other things, that butter shall contain not less than 82.5 per cent of butter fat.

Twenty-five samples of cheese were analyzed. The analysis in most cases was limited to the determination of the percentage of moisture. This work was done for the purpose of checking up the moisture content of American or cheddar cheese so that we would be in a better position to know the moisture content of the cheddar cheese being manufactured. In three instances the percentage of fat was also determined for the reason that we were led to believe that these three samples were made from skimmed or partly skimmed milk. A complete analysis of these three samples indicated that they were not made from skim milk. In only one of the twenty-five samples of cheese did we find the moisture content to be above 40 per cent and in this case only slightly above 40 per cent, it being 40.55 per cent. Most of the samples were found to contain between 38 and 39 per cent of moisture. While this is entirely too small a number of samples upon which to base any conclusion, still, when taken in connection with other available data it seems that the standard for moisture in cheddar cheese should be not to exceed 38 or 39 per cent.

During this period sixteen samples of cream were collected by members of the department with a view to determining whether or not overreading or underreading of the Babcock test was being practiced. In several instances we found that the Babcock test was being manipulated or underread and therefore the law relating to the false testing of milk or cream by the Babcock test was being violated. Prosecutions were ordered in some of these cases but owing to the fact that the district attorney, to whom these cases were referred, was about to go out of office he took no interest in the prosecutions and did not complete the cases. However, the re-

sults obtained on these samples were used as a basis of settlement between the patron of the creamery and the creamery, the creamery operator in several cases paying damages to the sum of several hundred dollars.

I feel that it would be advisable to license operators of the Babcock test. This would give us better control over people using the test. If our system of licensing were complete we could at least require an examination of the party applying for the license. By such an examination we could determine whether or not the applicant had the necessary knowledge and skill to make this test. While the Babcock test is rapid and accurate and easily applied to milk it is not so simple a method when applied to cream. The sampling and weighing of the sample for the Babcock test must be accurate, much more accurate when cream is tested than when milk is being tested. In adjoining states operators of the Babcock test are now licensed and I have been told that it has tended to improve testing in those states.

Sixteen samples of cream were collected from city milk supplies and submitted to the laboratory to confirm tests made by the inspectors. All of the samples were found to be below the legal standard in butter fat. In one case the percentage of fat was found to be 10.5. In other cases it was found to be as low as 12, 13 and 14. It is to be remembered in connection with these sixteen samples of cream not standard that our inspectors collected and tested in the various cities several hundred samples all of which samples were found to be above standard so that the character of these sixteen adulterated samples submitted is in no way an indication of the character of the cream offered for sale and sold in the cities of this state. There can be no doubt but what prosecution is justified in cases where we find city milk dealers' cream testing as low as 12, 13 and 14 per cent of butter fat. Thirty-one samples of city milk were collected by our inspectors and submitted for analysis. Thirteen of these samples were found to be standard and free from adulteration. Eighteen were found to be not standard, eleven of the eighteen being adulterated with water, three were found to be adulterated by skimming while in five cases the milk, though not standard, was evidently delivered as it was produced by the cow. City milk is an important food product. In many instances it is the entire food of an infant and for that reason alone no quarter should be shown adulterators of city milk. A prosecution, it seems to me, is justified in every case where water or skimming can be proved. Where the milk is delivered as it is produced by the herd and the owner of the herd has been notified on previous inspections that his herd is producing unlawful milk there, too, I feel that prosecution is warranted for this may be only another means of adulterating milk, namely, buying cows which produce milk below the legal standard in fat or solids not fat. City milk dealers sometimes make efforts to secure

milk from herds known to produce milk of this character. Such milk they would be able to buy at a lower price than lawful milk.

Twenty-seven samples of milk were collected by our inspectors as it was being delivered to either cheese factories or creameries. Five of the twenty-seven samples were found to be in compliance with the standard for milk. Twenty-two were found to be adulterated. The results of the analyses show that in many instances the amount of adulteration by the addition of water was as high as 30 and even 35 per cent. Most of this adulterated milk was delivered to cheese factories. One reason why the milk is so often adulterated at cheese factories is because the cheese factories make no effort to test the milk to determine whether or not it is standard or below standard but simply buy the milk at so much per pound. Of course the farmer knows that no test will be made of his milk at the factory and evidently in most of these cases where water was added, felt reasonably safe in adulterating. Prosecutions for the sale of adulterated milk at these places have a wholesome effect upon the community. If a majority of the patrons were delivering watered milk at a cheese factory that cheese factory would soon be forced to discontinue business for the reason that it would be impossible to get a normal yield of cheese if the milk were watered or it would be impossible to manufacture lawful cheese if the milk were skimmed. The results of adulteration of milk at these places is not limited to the cheat and fraud practiced by the adulterator but it affects the welfare of the cheese factory and if adulteration is general the cheese factory will be ruined. It is to be regretted that a large number of the cheese factories of the state are not equipped with Babcock testers and that the cheese makers do not use lactometers. If the milk were systematically tested at cheese factories I feel that the practice of adulterating milk delivered at these places would decrease.

Forty-eight samples of cream, one hundred and thirteen samples of milk and four samples of skim milk were submitted to be tested in the laboratory for the purpose of checking up Babcock determinations made by factorymen on these samples or for the purpose of detecting adulteration. These were samples submitted and with which the inspectors of this department took no part in collecting.

DRIED FRUITS

Ten samples of dried fruits were examined in the laboratory. Two of these samples were evaporated apples. One sample was labeled "15 ounces net, when packed". An examination of the product and the net weight on arrival at the laboratory indicated that either the apples were abnormally moist when packed or that they were short weight when packed. No attempt on the part of the packer of these goods was made to prevent evaporation. This could have been done by lining the inside of the carton with a wax

paper. These goods, being short weight, were misbranded. The other samples of evaporated apples were very wormy and should have been taken off of the shelf by the dealer.

One sample of dried peaches, submitted by Mr. Kelliher, city sealer of Green Bay, was found to be 12 per cent short weight and was therefore misbranded. The fruit was in a very moist condition and I feel positive that the short weight was not due entirely to shrinkage.

Five samples of seedless raisins were examined. All of these samples were bleached with sulphur dioxide. One sample was an inferior product showing evidence of having been moth eaten and contained larvae. Owing to the activity of this department with respect to the sale of bleached raisins during the previous year, we find that the merchants of the state are now handling unbleached raisins. The unbleached product is a far superior article and has the advantage of being a legal product. The bleached raisins are not legally salable in this state for the reason that they contain sulphurous acid. All of these products are products of interstate commerce and if the federal government would issue a ruling against the sale of bleached raisins I feel that our troubles would be at an end in this respect.

DRUGS

Eight hundred and ninety-eight samples of drugs, consisting mainly of alcohol, spirit of camphor and tincture of iodine were collected or submitted to this department for analysis. This year may be justly referred to as the year of the big drive against adulterated drugs. It was our purpose to clean up those parts of the state which on previous inspections had been missed and to make reinspections where adulterations had previously been found.

Of the twenty samples of alcohol submitted, eighteen were below standard owing to the fact that they contained less than 94.9 per cent of alcohol by volume. The druggists of the state have been careless in purchasing alcohol. They did not take the precaution of specifying at the time of purchase that the product was to be alcohol in compliance with the United States Pharmacopoeia. As a result they were in almost all cases furnished with 188 proof or ordinary commercial alcohol. The difference in price between this product and a product which complies with the requirements of the Pharmacopoeia is but a trifle, yet the alcohol in compliance with the Pharmacopoeia is a much superior product and should always be used in connection with the manufacture of drugs. In a few instances there was unmistakable evidence of the wilful adulteration by the addition of water. One of the samples contained only 70.97 per cent of alcohol by volume, another contained 72.96 per cent and another 80.72 per cent. A few of these samples were collected from wholesale liquor dealers and these samples were found to be exceptionally low.

Four hundred and fifteen samples of spirit of camphor were collected and analyzed. One hundred and sixty-seven of these samples were found to be in compliance with the standard for this product. One hundred and twenty-five of these samples were found to be deficient in camphor; twenty-nine samples were found to be deficient in camphor and contained added water; sixty-two samples were above standard in camphor; eight samples were above standard in camphor and contained added water, and twenty-four samples were standard in camphor but contained added water.

Four hundred and thirty samples of tincture of iodine were analyzed. Two hundred samples were found to be standard. Thirty-seven samples were found to be deficient in iodine; seventy-four were found to be deficient in iodine and potassium iodide; thirty-three were deficient in potassium iodide; twenty-four were above standard in iodine and potassium iodide; nine were deficient in iodine and above standard in potassium iodide; six were above standard in iodine but below standard in potassium iodide; twenty-four were above standard in potassium iodide, and twenty-six were found to be above standard in iodine.

This, it seems, shows a lamentable state of affairs with respect to these two simple drugs. We have from time to time analyzed samples of gum camphor and know that that product is reasonably free from adulteration. We have also analyzed samples of iodine and potassium iodide and know that those two drugs are free from adulteration, so that the only possible excuse can be carelessness or wilful adulteration on the part of pharmacists preparing these drugs. It really makes no difference whether it was wilful adulteration or carelessness, the result is the same and in either case we can see no plausible excuse. Personally I feel that in a few cases adulteration was wilfully carried on for the purpose of being able to undersell competitors. Then, too, there is an advantage financially in the sale of these products if they are only half standard. I believe that this work in drugs this year was especially successful for the reason that considerable publicity was given the work owing to the fact that a number of prosecutions were made. For a period of a little over two years these particular drugs had been collected and analyzed and when found to be adulterated letters of warning were sent to the violators of the law and surely every possible opportunity was afforded these people to make their product in compliance with the standard. Nevertheless it seemed absolutely necessary to bring quite a number of prosecutions and this action I feel was entirely justified at this time. No doubt, we should pick up other samples of drugs and of course it is needless to say that we should continue working on these two well-known preparations, picking up samples here and there from time to time.

Eleven samples of miscellaneous drugs were analyzed. One of these miscellaneous drugs, liquor potassium arsenites, was found to be slightly below standard. This product was reported to have been sent to us in the same condition in which it was received from

the manufacturer. As a result of our work the balance of the shipment of liquor potassium arsenites was returned to the manufacturer and replaced with a standard product.

FISH AND OYSTERS

Seven samples of fish and oysters were analyzed and of these seven samples five were samples of oysters. One sample was found to be misbranded with respect to measure. This sample was nine per cent short measure. Three of the five samples were found to contain an excessive amount of free liquor. In these samples the amounts of free liquor were found to be 46.19 per cent, 41.5 per cent and 38.22 per cent, respectively. Although an analysis of the oysters themselves obtained in these samples did not give positive evidence of watering, nevertheless so large a percentage of free liquor seems like adulteration. It may be true that proper care in mixing and stirring the oysters had not taken place during previous sales so that in the first sales made from these containers the percentage of free liquor was smaller, yet a person buying a quantity of oysters and getting half liquor is surely being defrauded. In the handling of oysters there has been much improvement made, especially along the lines of sanitation. Oyster containers are now of such construction that they can be kept clean and sanitary. In none of the samples did we find chemical preservatives. This was formerly a very frequent form of adulteration, boric acid being used freely.

FLAVORING EXTRACTS

Fifty-four samples of flavoring extracts were collected and analyzed. Twenty-eight of these samples were lemon extract, of which fifteen were not standard or were misbranded, thus leaving thirteen in compliance with the standard for this product. The most common form of adulteration with respect to this product was the sale of a terpeneless lemon extract for a genuine lemon extract. In most cases the label clearly showed the product to be a terpeneless product, yet the merchants sold it for a straight lemon extract. The difference between the two products is that the terpeneless extract is made from terpeneless oil of lemon or oil of lemon from which the terpenes have been removed. This process leaves the most valuable flavoring constituents, removing the terpenes which are of little or no value as far as the flavoring properties are concerned, and by this means an extract can be produced which is quite soluble in water. Four of these extracts were labeled to indicate that they were genuine lemon extracts, no reference being made on the label to the fact that they were terpeneless extracts. Seven of the extracts were found to be misbranded, being either short weight, that is, less than the quantity represented on the label, or they were not labeled with the net contents at all.

Fifteen samples of vanilla extract were collected and analyzed.

Nine of the samples were found to be in compliance with the standard for that product and six were not standard or were misbranded. There seems to be considerable misunderstanding on the part of the dealers with respect to vanilla extract. Many of the dealers of the state sell compounds of vanillin and coumarin artificially colored with caramel or coal tar dyes as and for vanilla extract. There are a number of well-known standard vanilla extracts on the market. Vanilla extract is not a cheap flavoring extract, and many of the merchants of the state are inclined to hand out the cheaper substitutes which are in imitation of vanilla extract, as and for vanilla extracts. Even though these substitutes are quite plainly labeled, the sale is very often made over the telephone or to children, and the housewife must either go to the trouble of returning these goods and complaining about them or she can take the less troublesome course of overlooking the matter. This is usually done, and for that reason many imitations and compounds are sold and used by housewives who intended to purchase a genuine vanilla extract. It may also be true that the housewife does not discover that this substitution has been made until she is ready to use the product, and under these conditions it is often impossible for her to return the goods and get genuine extract. A number of agents represent compounds and imitations to be of superior quality to the genuine product. This is fraud and dishonesty, pure and simple, for there is a great difference between genuine vanilla extract and these imitations.

Eleven samples of miscellaneous flavoring extracts were analyzed. Eight of these samples were essence of peppermint, all but one of which were found to be in compliance with the standard for that product. There seems to be some misunderstanding with respect to this product when sold as a flavoring for food purposes and when sold for medicinal purposes. When sold as a flavoring for foods the law requires that it shall contain not less than 3 per cent of oil of peppermint, whereas when it is sold as a drug the law requires that it shall contain not less than 10 per cent of oil of peppermint. Two samples of orange flavoring or extract were analyzed. One sample was standard and one was below standard.

FLOUR

Eleven samples of flour were analyzed. Three of these eleven samples were wheat flour. All three were found to be chemically bleached by the use of nitrous oxide. All three samples were also reported by the inspector to be misbranded, in that the sacks or packages in which they were packed were not labeled with the name and address of the manufacturer, packer or dealer. Prosecutions did not seem warranted in these cases, but the matter was taken up directly with the manufacturers of these flours, resulting in considerable correspondence with a final statement on their part to the effect that in the future chemically bleached flour would not be

sent into Wisconsin by them. One sample of rye flour compound was examined and found to be a mixture of wheat and rye milled from inferior grains. Two samples of buckwheat flour were found to be badly adulterated with either wheat or rye to the extent of about 15 per cent.

FOOD PRESERVATIVES

Forty-nine samples of food preservatives were analyzed. With the exception of one sample, all of these food preservatives were canning compounds. One compound sold by a dealer in Whitewater is of special interest, for the reason that it was labeled "Salicyl Acid," followed by the word "Poison." This dealer was perfectly willing to sell salicylic acid as a food preservative without adding the word poison until he found out that he was selling it to an inspector of the Dairy and Food Department. Upon learning that our inspector was a state official, he added the word "Poison." This product was found to be a commercially pure salicylic acid.

All of the other food preservatives were sold as canning compounds, and in all but one or two cases the product was Mrs. Price's Canning Compound, Mrs. Price's Compound or Mrs. Price's Specially Prepared Boric Acid. Mrs. Price's canning compound is a mixture of approximately 95 per cent of boric acid, between 4 and 5 per cent of salt and in some instances a small percentage of benzoate of soda. The sale of this compound in this state is in violation of law. Our definition of the term "Food" clearly includes a canning compound or any ingredient intended for use in the preparation of food. Our general preservative law specifically prohibits the sale of an article of food containing boric acid. Several cases were started against dealers for the sale of Mrs. Price's canning compound, and one case was tried in the municipal court of Kenosha, resulting in a conviction. However, this case has not been carried to a higher court, and the other cases started have been held in abeyance awaiting further developments in the Kenosha case. Since this case the labeling of the product has been changed. It is now being sold as "Mrs. Price's Compound," but its composition is still the same. While the Price Compound Company may be selling Mrs. Price's Compound without any reference to its use, nevertheless it is sold constantly by the retailer as a canning compound, and therefore comes within the jurisdiction of the food law. It is composed largely of a drug, boric acid, and in a few instances we found samples labeled "Mrs. Price's Specially Prepared Boric Acid." If this product were clearly labeled to show its true character and composition I do not believe that the people of Wisconsin would purchase it for use in foods. Even though the product is not labeled "Canning Compound," its purpose is for use in canning, and there is nothing on the label to indicate the value of the product as a drug. It must necessarily follow that it is sold for food purposes even by the Price Compound Company.

LINSEED OILS

Ninety-seven samples of linseed oil were analyzed. Twenty-five samples collected by our inspectors were found to be standard. Twenty-six samples collected by our inspectors were found to be adulterated or not in compliance with the standard for that product. Forty-six samples were submitted. Most of the submitted samples were in connection with linseed oil purchased by the State Board of Control or by various state institutions. Many of the oils purchased by the state institutions were found to be very badly adulterated. In some cases the adulteration was as high as 34, 35 and 36 per cent. The usual form of adulteration, namely, mineral oil or mixtures of mineral oil and resin oil, was present in those samples found to be not standard which were collected by our inspectors and submitted.

Enough work has been done on linseed oils and enough publicity has been given to the results of analyses to warrant prosecution in the future without a preliminary letter of warning. Most of this adulterated oil is sold by mail. The circulars or advertising matter sent out in connection with the sale of these adulterated products is of such a character that a reasonably careful merchant need not be deceived into buying these products. There is usually a small reduction in price and there are usually conflicting statements which should serve as a notice to the merchant. We find that these companies work the trade away from the railroads in country districts and in some cases these adulterated products have been sold directly to farmers for painting purposes. By cooperating with several merchants in the state we have been able to stop payment on several shipments of these adulterated products and as a result of the analyses made for the State Board of Control payment on a number of shipments of adulterated linseed oils and turpentine was stopped, showing that considerable good was done by analyzing these submitted samples.

The companies putting up these adulterated products are now trying to get under cover by selling their products under such labels as "Paint Oil", "Linseed Oil Compound" and other such names. This will not help them very much for the reason that we are still in a position to handle this proposition under our compound linseed oil law which requires that any oil used for painting purposes containing linseed oil must be labeled with the ingredients and the percentages thereof in the order of their greater preponderance. It is needless to say if these products are honestly labeled to show that they contain 30 and 40 per cent and sometimes even a higher percentage of mineral oil or machine oil, that the dealers in and the users of these products will discontinue purchasing them so that it seems that the next step will be against the sale of linseed oil compounds and paint oil compounds not properly labeled.

MEAT PRODUCTS

There were submitted during this period 6 samples of chopped meat products, three of which were bought for hamburger sausage, two of which were bought for chopped meat and meat trimmings and one of which was bought for homemade sausage. The analyses of these products showed them to be preserved with sulphurous acid or a salt thereof. The common salt of sulphurous acid is sodium acid sulphite.

Several years ago a general campaign on chopped meats and hamburger sausage was made and we found that many butchers were using these chemical preservatives. This use was so general that we felt that a vigorous campaign was necessary and many prosecutions were brought during those years for the sale of chopped meats containing those preservatives. The use of sulphites or any chemical preservatives in meat or meat products is a case where the man knows that he is adding a foreign substance and therefore should know what that substance is. So much publicity has been given to this kind of work and to the prosecutions following that we felt that the state had been cleaned up once and for all on this matter but apparently venders of chemical preservatives had been busy again in the state and it seemed that further work was necessary. The inspectors have picked up hamburgers and chopped meat products in other instances but it was only in six cases that we found the chemical preservatives present.

Thirteen samples of sausage were also analyzed for the presence of cereals or potato starch but none was found. Four samples of sausage were analyzed which were bought as sausage with cereal but all were found to be in compliance with the law.

OLEOMARGARINE AND LARD

Five samples of oleomargarine and two samples of lard were collected and analyzed. Two of the five samples of oleomargarine were held to be in imitation of yellow butter and their sale therefore in contravention of law. The two samples of lard were analyzed and both were found to be adulterated with beef fat. The one product was also misbranded in that the net weight was not stated on the package in which the lard was sold, the lard being in this case an article of food in package form.

PICKLES

Eight samples of pickles were analyzed. Six of the eight samples were sweet pickles. Four of the samples of sweet pickles were preserved with one tenth of one per cent of benzoate of soda. Two of these samples were also labeled to show that they were prepared with a small amount of alum. One of the samples was misbranded in that it was labeled "prepared with aluminum sulphate". The label should have read "prepared with alum". Another sample was misbranded in

that the package did not bear a label upon which was stated the name and address of the manufacturer, jobber or dealer. These four samples were adulterated in that they were preserved with benzoic acid.

SACCHARIN PRODUCTS

Forty-four samples of saccharin products consisting of honey, maple syrup and maple sugar were analyzed. In the thirteen samples of honey collected by our inspectors or submitted by citizens no adulteration was found but two of the samples were found to be misbranded in that the net weight or measure was not stated on the label, the honey in this case being an article of food in package form and the law relating to the branding of articles of food in package form requires, among other things, that the net contents in terms of weight or measure must be stated. There has been considerable misunderstanding on this point with respect to honey and this has come about largely because of the fact that some of the smaller beekeepers have been in the habit of extracting their honey, putting it in pint or quart fruit jars and selling it to the local merchants. In past years the local merchant has paid no attention whatever to the weight or measure of these articles of food for the reason that we had no law relating to the net weight or net measure of articles of food in package form. Since the passage of that law the inspectors have been taking up these cases as they find them, explaining the law and thus getting the merchants to properly label their products in compliance with law. We have also written to the beekeepers in these cases and have carried on a general campaign of education with respect to this form of violation. Where the extracted honey is put up in fruit jars and the fruit jars are of standard size it seems to me that this form of misbranding is not a serious one but of course must be and will be corrected as the inspectors find instances of misbranding of this type.

Fourteen samples of maple syrup were analyzed during this period and were found to be adulterated or misbranded. Most of these products were syrups that had been prepared by the farmers and the form of adulteration was that the samples were below standard in total solids as fixed by the legal definition and standard for maple syrup.

The definition and standard fixed by the legislature of this state in 1909 requires, among other things that maple syrup shall contain not to exceed 32 per cent of water and such a syrup will contain at least 68 per cent of total solids or maple sugar solids. In many instances the total solids were found to be below 60 per cent and in some cases they were even as low as 50 per cent. This form of adulteration I think is the result of a lack of knowledge on the part of the producers and of course is to some extent perhaps the result of a desire on their part to get as big a yield as possible. They therefore do not boil down or concentrate their maple sap sufficiently and the resulting maple syrup is adulterated in that it contains too much water and too small

a percentage of maple syrup solids. In some cases the product was being sold in a misbranded form in that it was not labeled with the name of the manufacturer, jobber or dealer and the package did not bear a label upon which was stated the net contents either in terms of weight or measure. This condition is the result of a misunderstanding on the part of the producers of this product. It is also a fact that these people are not, strictly speaking, in the business of producing maple syrup but produce it rather as a side line. They are farmers and it is only a small item as compared with the other farm products produced by them and for this reason undoubtedly they have not taken the trouble to inform themselves as to the requirements of law concerning this product. They pay more attention to the market price of oats, corn or potatoes than they do to the legal requirements for maple syrup. Here again we must do educational work by getting in touch with the producers of this product and inform them as to the requirements of law relating to the manufacture and sale of maple syrup.

SUBMITTED MISCELLANEOUS PRODUCTS

Sixteen samples of miscellaneous products, some of them submitted by other state departments, were analyzed, several of these being samples of drugs and soaps. No attempt was made to separate these miscellaneous products into classes for the reason that there were only a few of any one particular class and it was therefore thought advisable to report each one somewhat in detail in the table of analyses for these products.

TURPENTINES

One hundred and two samples of turpentine were analyzed. Forty-eight samples were found to be in compliance with the standard for this product and twenty-five were found to be adulterated. These seventy-three samples were collected by our inspectors. There were also twenty-nine samples which were submitted, most of which were submitted by the State Board of Control and by the Board of Public Affairs in connection with turpentine purchased for use at the various state institutions. The common form of adulteration still exists, that is, the addition of a light mineral oil of the nature of kerosene or a mixture of kerosene and benzine. In many instances the adulteration with kerosene or a mixture of kerosene and benzine ran as high as seventy and eighty per cent. In one case the product contained no turpentine at all. In those samples submitted by the Board of Control and the Board of Public Affairs, nine samples were found to be badly adulterated. One sample was adulterated to the extent of sixty per cent. These products were purchased for genuine turpentine but unfortunately were purchased from dealers outside of the state so that our department was unable to bring prosecution for their sale. Had this turpentine been purchased within the state it would have been

a simple matter for the dairy and food commissioner to have brought prosecutions for their sale but as it was most of these samples were bought in the state of Ohio and our jurisdiction ends at the state line. It is to be regretted that there is no federal law governing the sale of turpentine used for technical purposes. The only federal law governing the sale of turpentine is when the turpentine is sold for medicinal purposes and so labeled.

VINEGAR

Thirty-four samples of vinegar were submitted throughout the year by farmers and other people for the purpose of determining the amount of acetic acid formed during fermentation. Many of the samples were found to be below the legal standard required for acetic acid in this product. I feel that by doing this work we have succeeded in keeping these products from being offered for sale. If we had not done this work for these people the vinegar would undoubtedly have been sold by the merchant to the consuming public. All that was necessary in many cases was further fermentation.

In closing I wish to call attention to a few matters which I consider of special importance, the first being the advisability of a campaign of publicity and education. By that I mean not so much a campaign of education with respect to the merchant or manufacturer of foods but rather with respect to the consumers of foods. If we can stimulate a greater interest in pure foods through a campaign of publicity and education I feel that the consumers of foods will do much in assisting us in bettering food conditions. If the merchant once becomes aware of the fact that his customers are interested in pure foods and properly branded foods he will find it necessary to seek information regarding the products which he sells and this will make a better merchant out of him. I have during the past year given several talks to women's clubs, at the Farmers' Short Course and at the Home Economics Department of the University and I find that the people are eager to learn about foods and food adulteration. After a talk of this kind there are always many questions asked indicating that the people are interested in food adulteration, interested in knowing how different foods can be adulterated, what the common adulterants are and how they might easily be detected in the home. They have always shown a great interest in talks on sanitation of grocery stores and meat markets or the sanitary side of a city milk supply. If it were possible for this department to own a small, inexpensive, moving picture machine, together with several good reels so that the talks of this kind might be supplemented with pictures and illustrations, undoubtedly a bigger interest would be stimulated in our work and we would find unclean grocery stores and meat markets and other unclean food places improving because of the publicity given this subject. There are available several good reels pertaining to foods and

food supplies which other cities have used in connection with work of this kind. I have been informed with good results.

Another line of activity which I feel is needed is more cooperation in food matters between this department and the various city health departments. Many of the cities are now requiring their deputy health officers to do food inspection. Our inspectors are instructed to make it a point to meet such officials, nevertheless I feel that if these officials could be brought together for a conference from time to time we would thus stimulate interest in this branch of their work. Many of the deputy health officers have not had previous training in food work and therefore many of them are timid and backward in correcting conditions which they know to be unsanitary. Of course we must also remember that health officers are working in their own communities and are somewhat handicapped. Nevertheless if by some means we could stimulate their interest in this work and make them feel that we would stand back of them and cooperate with them we might be able to get more work and better results out of these officials and at the same time lighten the load for our inspectors in these cities. All cities do not have deputy health officers doing this kind of work but I feel that the time is soon coming when each city of any size will attempt to do something for itself in the control of foods.

Another very important kind of publicity is that given by publishing the results of the various tests made on city milks. Up to about a year ago a city dairy and food inspector in one of the cities of this state had been collecting samples of milk and cream at least once a month from the dairies delivering milk in the city, analyzing these samples for the percentage of fat and for adulteration and making a bacterial count and a sediment test on each sample. These results of analyses were charted and hung up on the wall of the local health officer's office, the result being that the only publicity given this work was to the limited number of people who might call upon this official. The dairymen were not especially interested in the results of these analyses. Unless some form of adulteration, watering, skimming or the use of chemical preservatives was charged against him he went on in the same rut, producing milk of about the same bacterial count and to a certain extent the good work of this city dairy and food inspector was lost. About a year ago, however, this official sought my advice on publishing the results of his work at the end of each month in the city newspapers and we worked out a form to be used. At first the dairymen whose milk showed a high bacterial count and whose sediment tests were not especially clean were highly indignant over the "Unfair methods" used by this city official. The city official, however, had enough backbone to stick to his convictions and continued to publish his results, the effect being that many of the producers of inferior grades of milk became interested in the problem of how to produce good milk and today we find that names which were at the

bottom of the list a year ago have moved up to the top of the list, indicating clearly what publicity has done for these dairymen and for the milk supply of this city. Of course the city milk supply is a local problem and should be handled locally in cities large enough to afford to do work of this kind. State cooperation given to these officials has raised the character of the work to a higher plane. It is only natural that city dairy and food inspectors should look to the state dairy and food commissioner for assistance and encouragement.

SUMMARY ANALYSES

1846 SAMPLES

	No. of Samples		
BEVERAGES.....			69
Tested for alcohol.....	34		
Grape juice and grape cider, not standard.....	20		
Miscellaneous.....	15		
BREAD.....			20
CANNED GOODS.....			9
DAIRY PRODUCTS.....			360
BUTTER.....		62	
Standard.....	17		
Not standard.....	15		
Submitted samples.....	30		
CHEESE.....		25	
Tested for percentage of moisture, also some for fat.....	9		
Cheddar cheese.....	16		
CREAM.....		32	
City supply, not standard.....	16		
Tested for percentage of butter fat to determine overreading or underreading of the Babcock test.....	16		
MILK.....		75	
Delivered at cheese factory or creamery, standard.....	5		
Delivered at cheese factory or creamery, not standard.....	22		
Herd samples.....	17		
City milk, standard.....	13		
City milk, not standard.....	18		
SUBMITTED SAMPLES.....		166	
DRIED FRUITS.....			10
DRUGS.....			898
ALCOHOL.....		20	
Standard.....	2		
Not standard.....	18		
SPIRIT OF CAMPHOR.....		415	
Standard.....	167		
Not standard, deficient in camphor.....	125		
Not standard, below standard in camphor and contains added water.....	29		
Not standard, above standard in camphor.....	62		
Not standard, above standard in camphor and contains added water.....	8		
Not standard, contains added water.....	24		
TINCTURE OF IODINE.....		430	
Standard.....	207		
Not standard, deficient in iodine.....	27		
Not standard, deficient in iodine and potassium iodide.....	74		
Not standard, deficient in potassium iodide.....	33		
Not standard, above standard in iodine and potassium iodide.....	24		
Not standard, below standard in iodine and above standard in potassium iodide.....	9		
Not standard, above standard in iodine and below standard in potassium iodide.....	6		
Not standard, above standard in potassium iodide.....	24		
Not standard, above standard in iodine.....	26		
MISCELLANEOUS.....		11	
SUBMITTED SAMPLES.....		22	
FISH AND OYSTERS.....			7
FLAVORS AND FLAVORING EXTRACTS.....			54
LEMON EXTRACT.....		28	
Standard.....	13		
Not standard or misbranded.....	15		
VANILLA EXTRACT.....		15	
Standard.....	9		
Not standard or misbranded.....	6		
MISCELLANEOUS.....		11	

	No. of Samples	
FLOUR.....		11
FOOD PRESERVATIVES.....		49
LINSEED OIL.....		97
Standard.....	25	
Not standard.....	26	
Submitted samples.....	46	
MEAT PRODUCTS.....		23
SAUSAGE AND SAUSAGE MEATS.....		19
Tested for chemical preservatives and cereals, none found...	13	
Found to contain sulphite, a chemical preservative.....	6	
SAUSAGE AND SAUSAGE WITH CEREAL.....		4
MISCELLANEOUS FOODS.....		24
OLEOMARGARINE AND LARD.....		7
PICKLES.....		8
SACCHARINE PRODUCTS.....		44
HONEY.....		13
MAPLE SUGAR AND MAPLE SYRUP.....		25
Standard.....	11	
Not standard.....	14	
Miscellaneous.....		6
SUBMITTED MISCELLANEOUS PRODUCTS.....		16
TURPENTINE.....		102
Standard.....	48	
Not standard.....	25	
Submitted samples.....	29	
VINEGAR.....		34
WATERS.....		4

BEVERAGES.

Tested for Alcohol.

Date	Submitted for	Submitted by	Per cent of alcohol by volume
1916			
July 6	Near beer	G. Taylor, Madison.	none
July 21	Near beer	Dr. George Spencer, Evansville.	0.38
July 26	Mead	*James Cox, Readstown.	1.35
July 26	Clear	*C. Sutherland, Readstown.	2.99
Aug. 8	Wine	E. J. Tully, Madison.	0.20
Aug. 8	Wine	E. J. Tully, Madison.	0.40
Aug. 19	Near beer	City Marshal, Stoughton.	0.34
Aug. 20	Temperance beer	J. B. Youmans, State Cooperative Laboratory, Superior.	4.71
Aug. 20	Temperance beer	J. B. Youmans, State Cooperative Laboratory, Superior.	0.73
Sept. 18	Domestic beer	Z. S. Rice, Sparta.	3.55
Sept. 20	Malt beverage	A. J. Brandan, Sparta.	4.18
Sept. 20	Apple elder compound	State Cooperative Laboratory, Superior.	7.09
Sept. 29	Apple elder	State Cooperative Laboratory, Superior.	6.17
Oct. 12	Home made wine	Alfred L. Drury, Kenosha.	12.64
Nov. 24	Cherollie	State Cooperative Laboratory, Superior.	2.30
Dec. 6	Apple ade	Dr. Lovenhart, Madison.	(†)
Dec. 6	Beverage	J. B. Youmans, State Cooperative Laboratory, Superior.	0.33
Dec. 6	Beverage	J. B. Youmans, State Cooperative Laboratory, Superior.	none
Dec. 6	Beverage	J. B. Youmans, State Cooperative Laboratory, Superior.	0.13
Dec. 6	Beverage	J. B. Youmans, State Cooperative Laboratory, Superior.	0.07
Dec. 6	Beverage	J. B. Youmans, State Cooperative Laboratory, Superior.	0.13
Dec. 6	Beverage	J. B. Youmans, State Cooperative Laboratory, Superior.	11.52
Dec. 7	Temperance beer	J. B. Youmans, State Cooperative Laboratory, Superior.	trace
Dec. 7	Temperance beer	J. B. Youmans, State Cooperative Laboratory, Superior.	0.10
Dec. 24	Pablo	H. B. Rogers, Portage.	none
1917			
Feb. 8	Elder	Clarence Ward, Madison.	6.98
Feb. 20	Beer	Mrs. John Hall, Chilton.	none
Mar. 28	Substitute wine	Hon. L. Whittet, Madison.	none
Mar. 28	Substitute wine	Hon. L. Whittet, Madison.	none
Mar. 31	Malta	H. E. Rohlf, Hayward.	0.23
April 14	Whiskey	W. G. Janke, Westfield.	(†)
May 1	Substitute wine	Mr. Pringle, Edgerton.	none
June 29	Vivo	J. F. Carew, Fond du Lac.	less than 0.1
June 29	Pep	J. F. Carew, Fond du Lac.	less than 0.1

* Bought of.

† Tested for chemical preservatives. None found.

‡ Not a whiskey. Contains a small amount of arsenic.

Grape Juice and Grape Older—Not Standard.

Date	Labeled	Purchased of	Manufacturer or Jobber	Remarks
1910 June 13	Grape Juice. Contains added Sulphur Dioxide.	F. W. Hanzlik, Chippewa Falls....	The Duroy & Haines Co., Sandusky, O.	Contains sulphurous acid.
June 29	Theo-Nett Sparkling Grape Juice. 6 fluid oz. Contains 34/1000 of one per cent sulphur dioxide.	Johnson & Hill Co., Grand Rapids	Theonett & Co., Chicago.....	Contains sulphurous acid.
Aug. 25	Duroy's Grape Juice. Sugar Solution added. Contains sulphur dioxide	C. A. Barwig, Wausau.....	Portland Vintage Co., Sandusky, O.	Contains sulphurous acid.
Aug. 30	Grape Juice. Contains Sulphur Dioxide.	W. G. Krogh, Kenosha.....	J. C. Meier Grape Juice Co., Silverton, O.	Contains sulphurous acid.
Sept. 22	Concord Grape 7½ oz.....	L. O. Schweitzer, Appleton.....	Wm. Hamm & Son, Appleton.....	Contains no fruit juice. Not a grape product. An artificially flavored and colored unfermented beverage.
Oct. 18	Bass Island Grape Juice. Contains .085 of 1% of sulphur dioxide.	Wm. Doerflinger, La Crosse.....	Bass Islands Vineyard Co., Sandusky, O.	Contains sulphurous acid.
Oct. 19	Grape Juice. 4 fluid oz. Contains sulphur dioxide.	City Grocery Co., La Crosse.....	Portland Vintage Co., Sandusky, O.	Contains sulphurous acid.
Nov. 27	Grape Juice. Sugar and water added. Contains added sulphur dioxide.	K. H. Pagenkopf, Wausau.....	Duroy & Haines Co., Sandusky, O.	Contains sulphurous acid.
Dec. 9	Duroy Grape Juice.....	The Marathon, Wausau.....	Duroy & Haines Co., Sandusky, O.	Contains sulphurous acid.
1917 Jan. 18	Duroy's Grape Juice. Contains sulphur dioxide.	Gimbel Bros., Milwaukee.....	Portland Vintage Co., Sandusky, O.	Contains sulphurous acid.
Jan. 19	Catawba Grape Juice. 12 oz. Unfermented. Contains 34/1000 of one per cent sulphur dioxide.	Thompson's Incorporated, Oconomowoc.	J. C. Meier Grape Juice Co., Silverton, Ohio.	Contains sulphurous acid.
Feb. 2	Meier's Catawba Grape Juice. 4 oz. Contains Sulphur Dioxide.	Smith Bros., Green Bay.....	John C. Meier Grape Juice Co., Silverton, Ohio.	Contains sulphurous acid.
Feb. 5	Meier's Catawba Grape Juice. 4 oz. Contains sulphur dioxide.	C. Denessen, Green Bay.....	John C. Meier Grape Juice Co., Silverton, Ohio.	Contains sulphurous acid.
Feb. 6	Meier's Catawba Grape Juice. 4 oz. Contains sulphur dioxide.	Niejahr Grocery Co., Green Bay.....	John C. Meier Grape Juice Co., Silverton, Ohio.	Contains sulphurous acid.

BEVERAGES—Continued.

Grape Juice and Grape Cider—Not Standard—Continued

Date	Labeled	Purchased of	Manufacturer or Jobber	Remarks
Feb. 6	Duroy's Grape Juice. Contains sulphur dioxide.	Bur Grocery Co., Green Bay.....	Duroy & Haines Co., Sandusky, O.	Contains sulphurous acid.
Mar. 6	Artificial White Grape Flavor. Made from pure apple juice. Contains 1/10 of 1% benzoate of soda.	Paul Hastings, Clinton Junction..	Old Fort Cider Works, Fort Wayne, Ind.	Not a grape juice product. Contains benzoic acid or a salt thereof.
Mar. 7	Duroy's Grape Juice, 4 Fluid Oz. Contains sulphur dioxide.	H. C. Rustad, Delavan.....	Portland Vintage Co., Sandusky, O.	Contains sulphur dioxide.
May 4	Unfermented Catawba	C. H. Sibbet Chetek.....	Eau Claire Grocery Co., Eau Claire.	Contains sulphurous acid.
May 23	Grape Juice, 4 fluid oz. Contains sulphur dioxide.	Weinstzke Bros., Wausau.....	Duroy & Haines Co., Sandusky, O.	Contains sulphurous acid.

Miscellaneous Beverages.

Date	Bought for	Labeled	Bought of	Remarks
1916				
Mar. 15	Orange soda .....	.....	J. H. Paulus, Highland.....	Not standard. Contains benzoic acid or salt thereof.
June 27	Pop	Lemon Sour. Artificial color and flavor.	Frank Wheeler, Nellisville.....	Misbranded in that contents and name and address of the manufacturer, jobber or dealer were not stated.
Aug. 28	Seizer water .....	.....	Wausau Bottling Works, Wausau..	Higher form of bacteria, branching form containing spores and yeasts present. Liquid cloudy.
Aug. 30	Strawberry soda .....	.....	Colby Bottling Works, Colby.....	Misbranded in that contents and name and address of the manufacturer, jobber or dealer were not stated.

Sep. 23	Lemon pop	Lemon Pop	N. A. Schultz, Two Rivers.....	No adulteration found.
Oct. 5	Orange cider	Orange Cider	H. Paspe, Neenah.....	Misbranded in that contents were not stated. Not an orange elder. Contains no orange juice.
Oct. 6	Pop	Apple Cider	Wm. Arnsmann, Neenah.....	No adulteration found.
Nov. 25	Apple elder	Apple Cider	Arthur Taylor, Rhinelander.....	Not standard. Not an apple elder. Misbranded in that contents were not stated.
Dec. 8	Birch beer	Birch Beer. Artificially flavored and colored. Prepared with pure spring water and benzoate of soda, one part in 2000.	Frank Tempesta, Cumberland.....	
1917				
Feb. 7	Pineapple soda	Pineapple 7½ oz	P. Gerarden, East DePere.....	No adulteration found.
Feb. 26	Raspberry pop	Raspberry Pop	W. A. Robins, Richland Center.....	No adulteration found.
Feb. 26	Orange pop	Orange Pop	W. A. Robins, Richland Center.....	No adulteration found.
April 10	Raspberry elder	Badger Brand Raspberry.....	Hurley Bottling Works, Hurley.....	Not standard. Not a raspberry elder. Artificially colored and flavored beverage. Contains no fruit juice.
April 19	Lemon soda	Lemon Soda. Artificial flavor an color. Contents 7 fluid ounces.	Almqvist & Fischer, Lewis.....	No adulteration found.
April 19	Chocolate soda	Chocolate. Artificial flavor and color.	Almqvist & Fischer, Lewis.....	Misbranded in that contents were not stated.

BREAD.

Date	Brand	Submitted by	Weight of loaf		Per cent of moisture
			lb.	oz.	
1916					
Dec. 18	Honey Maid	City Sealer of Weights and Measures, Racine.....	11	11/16	33.15
Dec. 18	Ward's Tip Top	City Sealer of Weights and Measures, Racine.....	10	25/32	30.34
Dec. 18	Charley's Quality	City Sealer of Weights and Measures, Racine.....	9	5/8	29.21
Dec. 18	Bankin's Bread	City Sealer of Weights and Measures, Racine.....	11	7/32	33.24
Dec. 18	Banquet Cream Bread	City Sealer of Weights and Measures, Racine.....	11	9/32	30.52
Dec. 18	Carpenter's Milk Bread	F. P. Downing, Madison.....	19	7/8	29.24
Dec. 18	Atlas Klean Maid	F. P. Downing, Madison.....	17	21/32	28.48
Dec. 18	Genuine Butternut	F. P. Downing, Madison.....	19	3/16	32.75

BREAD—Continued

Date	Brand	Submitted by	Weight of loaf	Per cent of moisture
			lb.	oz.
Dec. 20	Union.....	City Sealer of Weights and Measures, Sheboygan.	14 3/4	32.34
Dec. 20	Cream Bread	City Sealer of Weights and Measures, Sheboygan.	14 3/8	30.75
Dec. 20	Large Wheat	City Sealer of Weights and Measures, Sheboygan.	27 3/4	29.86
Dec. 20	Carpenter's Wheat	City Sealer of Weights and Measures, Sheboygan.	32 1/4	21.61
Dec. 23	Daisy Split	J. E. Boettcher, Madison.....	*20	35.18
Dec. 23	F. F. Reilly	J. E. Boettcher, Madison.....	*20	35.43
Dec. 23	Big Jo	J. E. Boettcher, Madison.....	*21	36.91
Dec. 23	F. F. Reilly	J. E. Boettcher, Madison.....	1 6 1/8	36.28
Dec. 23	Hoffman	City Sealer of Weights and Measures, Sheboygan.	*14 1/16	29.82
Dec. 23	Gerhard	City Sealer of Weights and Measures, Fond du Lac.	12 29/32	29.77
1917				
Jan. 2	Kleen Maid	Otto A. Frelberg, Fond du Lac.....	9.88	30.61
Jan. 2	Kleen Maid	Otto A. Frelberg, Fond du Lac.....	18.62	32.92

* Includes the weight of the wrapper.

† Purchased of.

CANNED GOODS.

Date	Bought for	Labeled	Bought of	Remarks
1916				
July 26	Luncheon beans	Luncheon Beans. Contents 2 lbs. 2 oz.	Ole Tohus, Viroqua.....	Not standard. Contains 20% of diseased beans.
July 26	Pork and beans	Pork and Beans. Contents 2 lbs. 2 oz.	Max Roman, Viroqua.....	Not standard. Contains 70% of diseased beans.
Sept. 22	Beans	Luncheon Beans. Tomato Sauce. Contents about 1 lb. 15 ounces.	L. E. Larson, Clifford.....	Passed.

Dec. 7	Imported peas	Imported Peas. Packed in France. 15½ oz. net.	O. A. Flinger, Fond du Lac.....	Misbranded in that name and address of the manufacturer, packer or dealer were not stated. No adulteration found.
Dec. 18	Mushrooms	Packed in France. Selected French Goods. Mushrooms First Choice. Contents 14½ oz.	Solon-Springs Merc. Co., Solon Springs.	
1917				
Jan. 26	Vegetable soup	Vegetable Soup. 11 oz. net wt.	Jos. Fellrath, Fond du Lac.....	No adulteration found.
Feb. 27	Beans-Navy		Joannes Bros. Co., Green Bay.....	Found to contain 13.5% of culls.
June 8	Canned corn	V and I Brand	*George J. Weigle, Madison.....	No adulteration found.
June 14	Canned peas	Elba Brand	*Dr. A. V. de Nemie, Wyocena.....	Misbranded as to weight and name. La- beled Canned Peas and found to be canned corn not properly prepared.

* Submitted by.

DAIRY PRODUCTS.

Butter—Standard.

Date	Purchased of	Manufacturer or Jobber
1916		
Aug. 14	Geo. Farrant, Grand Rapids.....	
Aug. 14	H. J. O'Rourke, Grand Rapids.....	
Sept. 21	Carey & Dobyns, Trevor.....	Mrs. Rinyard, Trevor.
Oct. 21	Kasdin's Fruit Store, Madison.....	Sheboygan Dairy Products Co., Madison.
Oct. 21	A. L. Weaver Cash Grocery, Madison.....	Sheboygan Dairy Products Co., Madison.
Nov. 28	Sheboygan Dairy Products Co., Madison.....	Sheboygan Dairy Products Co., Madison.
Dec. 4	O. R. Jacobsen, Madison.....	Madison Dairy Products Co., Madison.
Dec. 4	Shipke & Dorn, Madison.....	Sheboygan Dairy Products Co., Madison.
Dec. 11	Oppel's Fancy Grocery, Madison.....	
Dec. 22	Colfax Creamery Co., Colfax.....	Colfax Creamery Co., Colfax.
1917		
Feb. 14	John Meyer, West Salem.....	
Feb. 14	City Meat Market, West Salem.....	
April 16	Ontario Farmers Creamery, Ontario.....	Ontario Farmers Creamery, Ontario.
April 16	Otto Zimmerman, Ontario.....	
May 31	Herman Mack, Madison.....	Sheboygan Dairy Products Co., Madison.
June 1	F. P. Lawrence Co., Richland Center.....	J. T. Scott, Richland Center.
June 14	Oppel's Fancy Grocery, Madison.....	

DAIRY PRODUCTS—Continued.

Butter—Not Standard.

Date	Purchased of	Manufacturer or Jobber	% milk fat	% moisture
1916				
Aug. 14	*Willis Snyder, Grand Rapids			
Aug. 15	*W. J. Haskin, Wausau			
Aug. 15	*A. F. Steinke, Wausau			
Sept. 9	Edward F. Marcoe, Fond du Lac	Session Ice Cream Co., Fond du Lac	79.76	14.95
Oct. 13	Sheboygan Dairy Products Co., Madison	Sheboygan Dairy Products Co., Madison	78.35	16.50
Oct. 13	K. A. Bibbs, Madison	Sheboygan Dairy Products Co., Madison	78.96	16.20
Oct. 13	Sheboygan Dairy Products Co., Madison	Sheboygan Dairy Products Co., Madison	78.84	15.17
Oct. 21	Piper Bros., Madison	Sheboygan Dairy Products Co., Madison	79.55	16.185
Dec. 4	M. L. Nelson, Madison	Sheboygan Dairy Products Co., Madison	78.47	17.44
1917				
May 23	Kennedy Dairy Co., Madison	Jennings & Jahnke Creamery Co., McFarland	77.23	17.97
June 1	S. Huffman, Richland Center	Jennings & Jahnke Creamery Co., McFarland	78.19	16.93
June 1	S. Huffman, Richland Center	Sheboygan Dairy Products Co., Madison	80.23	15.6
June 14	M. L. Nelson, Madison	Wisconsin River Creamery Co., Muscoda	78.71	16.90
June 25	S. Huffman, Richland Center	Wisconsin River Creamery Co., Muscoda	79.59	14.83
		Wisconsin River Creamery Co., Muscoda	76.91	17.05

* Found to be oleomargarine and not butter.

DAIRY PRODUCTS—Continued.

Butter—Submitted Samples.

Suspected of Containing Foreign Fats or being below Standard in Fats.

Date	Submitted by	Remarks
1916		
Aug. 14	J. E. Boettcher, Madison.....	No foreign fat found.
Aug. 14	Joe Lovegrove, Exeland.....	No foreign fat found.
Dec. 15	F. Kamps, Grand Rapids.....	No foreign fat found.
Dec. 24	J. A. Cosgrove, Hillsboro.....	No foreign fat found.
Dec. 27	Margaret Brue, De Forest.....	No foreign fat found.
1917		
Jan. 2	Mrs. P. H. Oonley, Reedsburg.....	No foreign fat found.
Jan. 15	Geo. Ela, Rochester.....	No foreign fat found.
Jan. 15	J. Gross, Necedah.....	No foreign fat found.
Jan. 24	Perfection Butter & Cheese Co., Mayville	Moisture, 12.87%; fat, 81.9%.
Feb. 2	J. D. Cannon, New London.....	No foreign fat found.
Feb. 9	C. E. Lee, Madison.....	No foreign fat found.
Feb. 16	Carl W. Baitsch, South Kaukauna.....	No foreign fat found.
Feb. 19	F. M. Sage, Wild Rose.....	No foreign fat found.
Feb. 21	P. C. Pitkin, Lone Rock.....	No foreign fat found.
Feb. 21	Hoard's Creameries, Ft. Atkinson.....	Not butter but oleomargarine.
Mar. 5	E. J. George, Pewaukee.....	No foreign fat found.
Mar. 13	Farmers Store Co., Chetek.....	No foreign fat found.
Mar. 26	R. H. Runge, Franksville.....	No foreign fat found.
Mar. 30	Frank Bahtenkircher, Richland Center..	No foreign fat found.
April 10	Mrs. Wm. Fenton, Elcho.....	No foreign fat found.
April 16	Mary Henry, Merrill.....	No foreign fat found.
April 18	Mrs. Nick Kettenhofen, Manitowoc.....	No foreign fat found.
April 27	John Hallock, Larsen.....	No foreign fat found.
May 4	P. Rosen, Madison.....	No foreign fat found.
May 11	Miss Hatch, Madison.....	No foreign fat found.
May 21	Mrs. J. Brown, Waupun.....	No foreign fat found.
May 21	G. W. Tuttle, Antigo.....	No foreign fat found.
May 24	J. S. Roherty, Evansville.....	No foreign fat found. Flavor rancid.
May 24	J. S. Roherty, Evansville.....	No foreign fat found. Flavor rancid.
June 11	Lobdall Bros., Mukwonago.....	No foreign fat found.

Cheese—Tested for percentage of moisture; also some for fat.

Date	Submitted by	Per cent moisture	Per cent milk fat	Remarks
1917				
Feb. 5	Walter McCraney, Edgerton.....	20.1	43.0	Standard
April 16	Senator Byron Barwig, Mayville.....	38.71	33.50	Standard
June 7	O. E. Lee, Madison.....	39.3	.....
June 7	O. E. Lee, Madison.....	33.4	.....
June 7	O. E. Lee, Madison.....	38.1	.....
June 7	O. E. Lee, Madison.....	34.9	.....
June 18	Blodgett Cheese Co., Marshfield.....	37.3	.....
June 18	Blodgett Cheese Co., Marshfield.....	36.5	.....
June 18	Blodgett Cheese Co., Marshfield.....	22.17	.....

DAIRY PRODUCTS—Continued.**Cheddar Cheese.**

Date	Purchased of	Per cent moisture
1917		
June 11	John F. Kennedy, North Hewitt Cheese Co., Marshfield.....	40.55
June 11	Mrs. Oscar Dix, Rock Cheese & Butter Co., Auburndale.....	39.1
June 11	Mrs. Oscar Dix, Rock Cheese & Butter Co., Auburndale.....	38.1
June 12	W. E. Peterson, Curtiss.....	38.7
June 13	Curtiss Produce Co., Curtiss.....	37.6
June 13	Curtiss Produce Co., Curtiss.....	39.3
June 13	Ernst Mendel, Colby.....	40.0
June 13	Adolph Luethy, Curtiss.....	39.6
June 14	Rudolph Stock, Colby, R. 2.....	38.5
June 14	Henry B. Mauel, Colby.....	39.6
June 15	John Tesmer, Colby.....	37.5
June 15	Joe Steinwand, Colby.....	38.5
June 21	Grant McClellan, Aurorahville.....	38.75
June 21	M. A. Koehler, West Bloomfield.....	37.25
June 26	*Spiech Bros., Pittsville.....	34.24

* Tested for per cent of milk fat and found to contain 32.50%.

Cream from City Supply—Not Standard.

Date	Bought of	Per cent milk fat
1916		
Dec. 1	Meta Keuhn, Medford.....	15.5
Dec. 4	Fred Larson, Cumberland.....	13.0
Dec. 8	Virtus Sisters, Hudson.....	16.5
Dec. 22	E. P. Rosenberg, Colfax.....	13.0
1917		
Jan. 9	Chas. Reed, Eau Claire.....	13.5
Feb. 13	John F. Dietzen, Appleton.....	15.5
Feb. 13	T. H. Schleffers, Appleton.....	14.5
Mar. 20	Joe Braden, Boomer.....	15.5
Mar. 20	Geo. Funk, Watertown.....	10.5
April 5	Ed. Greaney, Lancaster.....	14.25
April 5	Arthur Zine, Lancaster.....	17.0
April 14	J. D. Roberts, Wild Rose.....	12.0
April 24	Ashland Creamery Co., Ashland.....	16.0
April 24	Ashland Creamery Co., Ashland.....	14.0
April 24	A. P. Sunrud, Ashland.....	17.5
April 26	O. I. Melbourne, Dodgeville.....	14.5

DAIRY PRODUCTS—Continued.

**Cream Samples Tested for Per Cent of Butter Fat to Determine
Overreading or Underreading of Babcock Test**

During the period covered by this report, sixteen samples of cream were collected by members of the commission with the view of determining whether or not overreading or underreading of the Babcock test was being practiced by the purchasers of cream who were paying for the same on the basis of the butter fat contained therein as determined by the Babcock test. The percentage of fat in these samples was determined in the laboratory.

Milk Delivered at Cheese Factories or Creameries—Standard.

Date	Sold or Delivered by	Delivered to
1916		
July 31	Ferd Thoman, Monticello.....	Theiler Cheese Factory, Monticello.
Aug. 8	John Sassman, Black Creek.....	Diedrick Cheese Factory, Black Creek.
Aug. 24	Albert Buckhardt, Sheboygan.....	
	Falls, R. 9	John Peters Factory Sheboygan Falls.
Nov. 17	August Kowalkowski, Embarrass	Silver Star Cheese Factory.
1917		
Jan. 19	Chas. Allain, Unity.....	Unity Cheese Factory, Unity.

DAIRY PRODUCTS—Continued.
Milk—Not Standard. Delivered to Cheese Factories or Creameries.

Date	Sold or Delivered by	Sold or Delivered to	Sp. G. 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey 20° C.	Remarks
1916								
Aug. 8	John Sasman, Black Creek.....	Diedrich Cheese Factory.....	1.0260	2.80	10.19	7.39	36.15	Watered.
Aug. 21	Abel Harding, Sr., Chill.....	Riverside Cheese Factory.....	1.0354	2.75	11.58	8.83	.....	Slightly skimmed.
Aug. 24	Albert Burkhardt, Sheboygan.....	John Peters Cheese Factory.....	1.0270	2.55	10.40	7.45	38.0	Watered.
Aug. 25	Herman Herzberg, Arpin.....	North Hamon Cheese Factory.....	1.0212	2.85	8.54	5.60	31.75	Watered.
Sept. 12	G. Reich, Oconomowoc.....	Summit Valley Cheese Factory.....	1.0257	3.2	10.36	7.16	35.85	Watered.
Nov. 17	Aug. Kowalkowski, Embarras.....	Silver Star Cheese Factory.....	1.0237	2.5	8.55	6.03	31.1	Watered.
Dec. 1	Chas. W. Singler, Shiocton.....	Shiocton Creamery.....	1.0223	2.20	10.56	8.36	39.65	Watered.
Dec. 1	Chas. Meyer, Shiocton.....	Shiocton Creamery.....	1.0269	3.4	10.67	7.27	35.75	Watered.
Dec. 12	Aug. Mellus, Oconomowoc.....	Brown St. Cheese Factory.....	1.0210	2.70	8.39	5.69	31.8	Watered.
Dec. 20	Wm. Carey, Jr., Clamaine.....	Edelweiss Cheese Factory.....	1.0208	2.8	10.01	7.21	35.8	Watered.
1917								
Jan. 19	Chas. Allain, Unity.....	Unity Cheese Factory.....	1.0332	2.6	11.34	8.74	.....	Skimmed.
Jan. 23	L. O. Kaufman, Plymouth.....	Oak Grove Union Cheese Factory.....	1.0250	3.1	10.25	7.15	37.15	Watered.
Feb. 9	Henry Lehmann, Juneau.....	Spring Valley Cheese Factory.....	1.0303	2.65	10.60	7.95	39.2	Watered.
Feb. 16	Wm. Illian, Adell.....	Spring Valley Cheese Factory.....	1.0280	3.7	11.88	8.18	38.0	Watered.
Feb. 16	Chas. Streck, Random Lake.....	Spring Valley Cheese Factory.....	1.0272	2.65	9.97	7.32	37.3	Watered.
Feb. 27	Wm. Krause, Sr., Waterloo.....	Fountain Cheese Factory.....	1.0271	3.0	10.33	7.33	36.7	Watered.
Feb. 28	Paul Heideman, Waterloo.....	Fountain Cheese Factory.....	1.0256	3.05	9.97	6.92	36.35	Watered.
Mar. 9	Herman Ahrens, Sheboygan.....	Sheboygan Dairy Products Co.....	1.0245	2.90	9.22	6.32	34.8	Watered.
Mar. 13	Wm. Gunz, Clintonville.....	Mill Creek Cheese Factory.....	1.0275	3.00	10.40	7.40	36.6	Watered.
April 6	Joe Patrie, Rosellville.....	Green Valley Cooperative Dairy Co.....	1.0207	2.10	7.57	5.47	31.4	Watered.
April 16	H. H. Raymond, Rosellville.....	Green Valley Cooperative Dairy Co.....	1.0321	2.1	10.63	8.53	.....	Skimmed.
May 24	Chas. Jacobs, Arpin.....	North Arpin Cheese Factory.....	1.0329	2.50	11.24	8.74	.....	Slightly skimmed.

DAIRY PRODUCTS—Continued.

Herd Samples Collected by Inspectors in Connection with Samples Taken at Cheese Factories, Creameries, and City Milk Supplies, Sent to Laboratory for Analysis.

Date	From Herd of	Sp. G. 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey at 20° C.
1916						
Aug. 23	Abel Harding, Sr., Ohill	1.0327	4.1	12.68	8.58	.....
Sept. 13	Gustave Reick, Oconomowoc	1.0317	4.25	13.02	8.77	40.5
Nov. 28	Arthur Healy, Mukwonago	1.0310	3.7	12.10	8.32	40.0
Nov. 29	Arthur Healy, Mukwonago	1.0323	3.5	12.28	8.78	41.15
Dec. 1	Chas. Beyer, Shiocton	1.0313	4.22	12.59	8.37	39.25
Dec. 2	Chas. W. Singler, Shiocton	1.0291	3.90	11.71	7.81	38.85
Dec. 12	August Mellus, Oconomowoc	1.0302	4.20	12.43	8.23	39.7
Dec. 26	Wm. Carey, Oatamine	1.0318	4.30	12.80	8.50	.....
1917						
Jan. 17	Martin Hartman, Plymouth	1.0329	4.3	13.26	8.96	41.3
Jan. 26	Oal Wood, Grand Rapids	1.0310	4.15	12.72	8.57	40.15
Feb. 16	Chas. Streck, Random Lake	1.0312	3.65	11.59	8.54	40.8
Feb. 17	Wm. Illian, Adell	1.0310	4.2	13.23	9.03	41.15
Mar. 1	Henry Lehman, Juneau	1.0302	2.75	10.65	7.90	38.8
Mar. 9	Herman Ahrens, Sheboygan	1.0292	4.00	11.78	7.78	40.0
Mar. 13	William Gunz, Clintonville	1.0232	4.06	12.55	8.50	39.4
Mar. 15	A. J. Zickert, Beloit	1.0316	3.1	11.36	8.26	40.5
Mar. 22	Isaac Dearhammer, Beloit	1.0316	3.37	11.27	7.90	40.2

City Milk—Standard.

Date	Purchased of	Date	Purchased of
1916			
Sept. 11	L. E. Corey, Colfax	Feb. 13	Frank Zadvazil, Muscoda.
Sept. 12	L. E. Corey, Colfax	Feb. 27	Herbert Liegel, Plain.
1917		Feb. 27	Herbert Liegel, Plain.
Jan. 22	Marshfield Dairy Co., Marshfield.	Feb. 27	Herbert Liegel, Plain.
Jan. 23	Marshfield Dairy Co., Marshfield.	Feb. 27	Herbert Liegel, Plain.
Jan. 25	Hans Hanson, Lake Mills.	April 6	Ersamer Bros., Hurley.
Feb. 13	Phillip Machtko, Muscoda.	May 2	N. W. Depot Lunch, Madison.

DAIRY PRODUCTS—Concluded.

City Milk—Not Standard.

Date	Delivered by	City	Sp. G. 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey at 20° C.	Remarks
1916								
Sept. 12	L. E. Corey, Colfax.....	Colfax	1.0295	8.4	11.58	8.18	.....	Watered
Nov. 28	United Dairy Co., Mukwonago.....	Mukwonago	1.0298	2.70	9.02	6.32	33.65	Watered
Nov. 28	United Dairy Co., Mukwonago.....	Mukwonago	1.0250	2.70	9.48	6.78	35.0	Watered
1917								
Jan. 16	Martin Hartman, Plymouth.....	Plymouth	1.0276	3.0	10.30	7.30	36.9	Watered
Jan. 25	T. Glembo, Lake Mills.....	Lake Mills	1.0401	3.0	10.91	7.91	39.75	Watered
Jan. 26	Cal Wood, Grand Rapids.....	Grand Rapids	1.0277	2.43	9.82	7.39	36.65	Watered
Jan. 26	Cal Wood, Grand Rapids.....	Grand Rapids	1.0298	2.70	9.70	7.00	35.95	Watered
Jan. 27	Cal Wood, Grand Rapids.....	Grand Rapids	1.0298	2.50	9.65	7.15	36.3	Watered
Feb. 7	Wm. Haeger, Merrill.....	Merrill	1.0310	3.0	11.03	8.03	43.95	Watered
Feb. 13	Mrs. Geo. Perry, Appleton.....	Appleton	1.0266	2.80	10.05	7.25	36.5	Watered
Mar. 13	A. J. Zickert, Beloit.....	Beloit	1.0271	2.7	10.08	7.38	37.1	Watered
Mar. 16	A. J. Zickert, Beloit.....	Beloit	1.0270	3.1	10.56	7.46	38.0	Watered
Mar. 21	A. J. Zickert, Beloit.....	Beloit	1.0279	3.15	10.13	6.98	37.85	Watered
Mar. 23	Geo. Burmeister, Waukesha.....	Waukesha	1.0298	2.60	10.85	8.25	.....	Skim'd
Mar. 28	Wm. Haeger, Merrill.....	Merrill	1.0330	2.50	11.26	8.76	.....	Watered
April 4	H. R. Roethlisberger, Oshkosh.....	Oshkosh	1.0316	2.6	11.01	8.41	38.2	Slightly
May 2	August Hoppe, Port Washington.....	Port Washington	1.0298	2.6	10.43	7.83	38.2	skimmed
May 11	T. P. O'Malley, Waunakee.....	Waunakee	1.0319	2.8	11.43	8.63	40.8	

Submitted Samples

Forty-eight samples of cream, 113 samples of milk, 4 samples of skimmed milk and 1 sample of mother's milk were submitted either for the purpose of checking up Babcock determinations which had been made by factory men on these samples, or to detect adulteration.

DRIED FRUITS.

Date	Bought for	Labeled	Bought of	Remarks
1916				
Feb. 15	Evaporated apples	Apples. Bleached with sulphur. 15 oz. net wt. when packed.	Carroll Bros., Monroe	Short weight. Abnormal shrinkage.
Feb. 15	Evaporated apples	Apples. Bleached with sulphur.	Meythaler Bros., Monroe	Not standard. Wormy.
Aug. 7	Figs	California Figs. Prepared with Sulphur Dioxide.	Erickson & Evenson, Stetsonville	Not standard. Filthy and wormy.
Sept. 6	Figs	Fancy California Figs. Net weight 9 oz. Contains sulphur dioxide.	Mills Mercantile Co., Trego	Not standard. Bleached with sulphur dioxide.
Oct. 12	Bleached raisins	Bleached raisins	Boston Store, Milwaukee	Not standard. Bleached with sulphur dioxide.
Oct. 12	Raisins		A. J. Zderad, Phillips	Not standard. Bleached with sulphur dioxide. An inferior product. Moth eaten.
Nov. 18	Raisins	Fancy Bleached Thompson Raisins	W. A. Parent, Cable	Not standard. Bleached with sulphur dioxide.
Nov. 24	Bleached raisins	Thompson Seedless Sulphur Bleached Raisins. 15 oz. net	B. L. Horr, Rhinelander	Not standard. Bleached with sulphur dioxide.
Dec. 2	Dried peaches		*J. M. Kelliber, Green Bay	Misbranded. 12% short weight.
1917				
June 20	Bleached raisins	Fancy Bleached Sultana Raisins	J. R. Carroll, Hammond	Not standard. Bleached with sulphur dioxide.

* Submitted by.

DRUGS.

Alcohol—Standard.

According to the latest edition of the U. S. Pharmacopoeia, alcohol contains 94.9% by volume of absolute ethyl alcohol.

Date	Purchased of
1916 Oct. 5	The Grinnell-Rounsaville, New Richmond.
1917 Mar. 16	Corner Drug Store, Columbus.

Alcohol—Not Standard.

Date	Purchased of	Per cent alcohol by volume	Date	Purchased of	Per cent alcohol by volume
1916 July 14	H. Horn, Loyal.....	93.5	Nov. 20	Bitchenau's Family Liquor Store, Ashland.....	59.11
Sep. 20	John Gerrits, Appleton.....	86.18	Dec. 5	A. F. Watke, Fond du Lac.....	71.87
Sep. 26	F. Sixta & Sons Co., Manitowoc.....	78.85	Dec. 7	Lauenstein Liquor Co., Fond du Lac.....	80.72
Sep. 26	R. Klingholz Co., Manitowoc.....	93.1	Dec. 7	Kunmerow & Menge, Fond du Lac.....	70.97
Oct. 3	Kaukauna Drug Co., South Kaukauna.....	93.85	Dec. 26	Sam Goldstein, Beloit.....	79.27
Oct. 5	The Sherman-Catlin Drug Co., New Richmond.....	93.41	Dec. 28	F. P. Curry, Beloit.....	93.47
Oct. 16	La Crosse Liquor Co., La Crosse.....	73.73	Dec. 28	H. Carroll, Beloit.....	72.96
Oct. 16	Badger Distilling Co., La Crosse.....	83.74			
Oct. 16	Elliott-Loeffler Co., La Crosse.....	93.3	1917		
Oct. 16	C. Cady, La Crosse.....	93.6	Mar. 30	Reinhardt & Frigina, Fountain City.....	93.64

Spiritus Camphorae (Spirit of Camphor).

The latest edition of the U. S. Pharmacopoeia requires that spirit of camphor be made by dissolving camphor in alcohol and further requires that 100 ccs. of spirit of camphor contain not less than 9.5 grams nor more than 10.5 grams of camphor.

Spirit of Camphor—Standard.

Purchased of		Date	Purchased of		Date
1916					
July 7	Chas. Taylor, Orfordville.	Aug. 30	Mayer Pharmacy, Kenosha.		
July 10	J. E. Cance, Ettrick.	Aug. 31	Gieseler's Pharmacy, Racine.		
July 10	Garvey's Pharmacy, Prairie du Chien.	Aug. 31	Kradwell Drug Co., Racine.		
July 10	P. W. Gullord, Greenwood.	Aug. 31	Heck's 20th Century Drug Store, Racine.		
July 14	H. Horn, Loyal.	Aug. 31	E. F. Stokes, Racine.		
July 14	C. G. Ford, Twin Lakes.	Aug. 31	Red Cross Drug Co., Racine.		
July 15	Wichmann's Pharmacy, Wausau.	Aug. 31	Kradwell Drug Co., Racine.		
July 25	Frank B. Wing, Abbottsford.	Sept. 11	Ole Noer, Colfax.		
Aug. 2	E. E. Gatchell, Hudson.	Sept. 19	Voigt's Drug Store, Appleton.		
Aug. 2	Sexton's Prescription Store, Marshfield.	Sept. 21	Will C. Johnson, Eau Claire.		
Aug. 2	R. J. Strauss, Marshfield.	Sept. 21	Branstad Drug Co., Eau Claire.		
Aug. 3	A. Swahn & Co., Ellsworth.	Sept. 21	Cass Drug Store, Eau Claire.		
Aug. 8	H. J. O'Connor, Whitewater.	Sept. 21	Lars I. Urhelm, Eau Claire.		
Aug. 11	A. A. Luack, Antigo.	Sept. 25	Park Drug Store, Manitowoc.		
Aug. 11	Albers' Drug Store, Antigo.	Sept. 25	C. A. Groffman, Manitowoc.		
Aug. 11	Gauthier's Drug Store, Antigo.	Sept. 25	F. W. Barnstein, Manitowoc.		
Aug. 15	O. F. Baker & Co., Shell Lake.	Sept. 25	North End Drug Co., Manitowoc.		
Aug. 15	Otto E. Rydell, Superior.	Sept. 26	O. C. Stockmeyer, Two Rivers.		
Aug. 15	Cameron's Pharmacy, Superior.	Sept. 26	J. K. Stephany, Two Rivers.		
Aug. 15	Ryan Pharmacy, Superior.	Sept. 26	Fred Look, Sheboygan.		
Aug. 16	Mooney's Pharmacy, Ladysmith.	Sept. 26	W. S. Harvey, Excelsior.		
Aug. 17	Abby's Pharmacy, Superior.	Sept. 27	Poster Mercantile Co., Salem.		
Aug. 21	L. Jensen, Cameron.	Sept. 29	Avenue Drug Store, South Milwaukee.		
Aug. 21	Idjorlek-Hahnberg Drug Co., Superior.	Sept. 29	H. F. Bergmann, South Milwaukee.		
Aug. 23	Woodhead's Drug Store, Ashland.	Oct. 4	Schultz Bros., Neenah.		
Aug. 23	Ed. Happenyan's Drug Store, Ashland.	Oct. 4	Foss Drug Co., Menasha.		
Aug. 25	Dean Swift, Edgerton.	Oct. 4	John Rosch, Menasha.		
Aug. 25	Williams Drug Store, Kenosha.	Oct. 4	Marsh Bros., Neenah.		

DRUGS—Continued.

Spirit of Camphor Standard—Continued.

Date	Purchased of	Date	Purchased of
Oct. 4	Elver's Pharmacy, Neenah.	Oct. 13	B. Schoenkerman, Milwaukee.
Oct. 5	The Grinnell-Rounsaville Co., New Richmond.	Oct. 13	Dr. Ernest A. Petzke, Hixton.
Oct. 6	City Drug Store, Park Falls.	Oct. 13	Kiehm Pharmacy, Milwaukee.
Oct. 9	Schrader Drug Co., Milwaukee.	Oct. 13	W. F. Lambeck, Milwaukee.
Oct. 9	O. A. Thielke, Milwaukee.	Oct. 13	Drug Craft Shop, Milwaukee.
Oct. 9	Hotel Martin Pharmacy, Milwaukee.	Oct. 13	E. A. Showalter, Milwaukee.
Oct. 9	A. Spiegel Co., Milwaukee.	Oct. 16	Hoeschler Bros., La Crosse.
Oct. 9	Wellsow Drug Co., Milwaukee.	Oct. 16	Jude's Pharmacy, La Crosse.
Oct. 9	Abe Brown, Milwaukee.	Oct. 17	E. A. Zoersch, Butternut.
Oct. 9	Wright Drug Co., Milwaukee.	Oct. 23	Harry Koerner, Jefferson.
Oct. 9	C. H. Krause, Milwaukee.	Oct. 24	John Breunau, Oshkosh.
Oct. 9	Wells Building Drug Co., Milwaukee.	Oct. 24	White Cross Drug Co., Oshkosh.
Oct. 9	Esser Bros., Milwaukee.	Oct. 26	J. F. W. Schmidt, Oshkosh.
Oct. 9	Gumbel Bros., Milwaukee.	Oct. 31	W. G. Cotanche, Oshkosh.
Oct. 10	L. C. Schneider, Milwaukee.	Oct. 31	F. W. Lambrecht, Berlin.
Oct. 10	Carl Mootz, Milwaukee.	Nov. 1	Grimmer Drug Co., Mauston.
Oct. 10	L. G. J. Mack, Milwaukee.	Nov. 1	Ward O. Gilbert, Melrose.
Oct. 10	A. Spiegel Co., Milwaukee.	Nov. 6	P. J. Comer, Mauston.
Oct. 10	Drake Bros. Co., Milwaukee.	Nov. 10	Fred H. Gadaby, Eau Claire.
Oct. 10	A. Czerwikski, Milwaukee.	Nov. 10	Chas. I. Nielaug, Fenimore.
Oct. 11	Weissenborn's Pres. Drug Store, Milwaukee.	Nov. 20	R. S. Williams, Fenimore.
Oct. 11	A. J. Loepple, Milwaukee.	Nov. 20	Crabb-Giese Co., Ashland.
Oct. 11	Widnie's Drug Store, Milwaukee.	Nov. 21	City Drug Store, Washburn.
Oct. 12	H. J. Scott, Milwaukee.	Nov. 22	J. E. Kyilo, South Superior.
Oct. 12	H. A. Scott, Milwaukee.	Nov. 23	Priest's Pharmacy, Superior.
Oct. 12	Vogel's Pharmacy, Milwaukee.	Nov. 23	Louis Moersch, Elkhart Lake.
Oct. 12	D. Ternorst, Milwaukee.	Nov. 24	J. C. F. Bullock, Maunawa.
Oct. 12	Mueller Pharmacies, Milwaukee.	Nov. 25	Braun's Drug Store, Merrill.
Oct. 12	J. P. Orten, Milwaukee.	Dec. 6	Hager Pharmacy, Cassville.
Oct. 12	Wm. Hiecke, Milwaukee.	Dec. 7	McCarthy Drug Co., Fond du Lac.
Oct. 13	Mueller Pharmacies, Milwaukee.	Dec. 15	W. H. Rethwill, Clayton.
		Dec. 23	P. H. Griffin, Ladysmith.

1917		1916	
Jan. 4	Bishop & Livesey, Woneoc.	July 7	F. G. Pomeroy, Weyerhaeuser.
Jan. 4	Jacob Schowalter, Milwaukee.	July 17	Red Cross Pharmacy, Prairie du Chien.
Jan. 4	A. Læthe, Milwaukee.	July 26	F. F. Swanson, Minong.
Jan. 10	J. W. Boynton & Son, Amherst.	Aug. 1	Citizen's Drug Store, Mosinee.
Jan. 20	G. T. Pece, Adams, Almond.	Aug. 2	W. A. Liese, Marshfield.
Jan. 25	Chris Dilgen, Dalton.	Aug. 2	Sutherland's Pharmacy, Hudson.
Jan. 29	Corner Drug Store, Green Bay.	Aug. 3	Moody-Eaker-Elliott Co., Ellsworth.
Jan. 29	S. M. Kersten, Green Bay.		
Jan. 31	J. E. Roberts & Co., Cambria.		
Feb. 1	E. B. Patton, Waupun.		
Feb. 9	J. E. Simpson, Endeavor.		
Feb. 11	Mayer's Drug Store, South Kaukauna.		
Feb. 16	W. J. Raath, Poynette.		
Feb. 16	A. G. Wepler Co., Kaukauna.		
Feb. 23	Kaukauna Drug Co., Kaukauna.		
Mar. 1	E. C. Molstad, Rio.		
Mar. 5	Sharon Pharmacy, Sharon.		
Mar. 7	L. A. Christensen, Baldwin.		
Mar. 7	H. C. Rustad, Delavan.		
Mar. 7	Jackson & Jackson, Delavan.		
Mar. 9	Baudhuin Bros., Abrams.		
Mar. 12	J. E. Rogers, Beaver Dam.		
Mar. 12	E. J. Booth, Walworth.		
Mar. 14	The Lena Pharmacy, Lena.		
Mar. 14	W. H. Hammersley, Lake Geneva.		
Mar. 15	Alfred Kristiansen, Stanley.		
Mar. 16	Guinn Bros., Hannabel.		
Mar. 19	W. J. Pierce, Cadott.		
Mar. 20	Klug's Pharmacy, Whitewater.		
Mar. 21	Standard Mercantile Co., Tomahawk.		
Mar. 21	Tomahawk Drug Co., Tomahawk.		
Mar. 21	A. H. Erickson, Soldiers Grove.		
Mar. 24	C. F. Mathews, Viola.		
Mar. 29	Van Wie's Pharmacy, Tomah.		
Mar. 29	F. L. Schilling, Minocqua.		
April 6	R. E. Arnold, Fairchild.		
April 10	J. F. Sullivan, Hurley.		
April 20	C. E. Williams, Neenah.		
April 23	W. H. Kummer, Wauwatosa.		
May 1	W. S. Hess, Cazenovia.		
May 21	N. C. Unseeth, Grantsburg.		
June 13	Hocking Bros., Waupaca.		
June 13	C. A. Spencer, Waupaca.		
June 14	J. C. F. Bullock, Manawa.		
June 14	City Drug Store, Iola.		
June 14	O. J. Jarvis, Iola.		

Spirit of Camphor—Not Standard. Deficient in Camphor.

Date	Purchased of	Grams camphor per 100 ccs.	Date	Purchased of	Grams camphor per 100 ccs.
1916					
July 7	F. G. Pomeroy, Weyerhaeuser.	8.55	Aug. 4	O. J. Thompson, Whitehall.	8.95
July 17	Red Cross Pharmacy, Prairie du Chien.	8.22	Aug. 4	A. M. Nash & Co., East Ellsworth.	8.27
July 26	F. F. Swanson, Minong.	8.88	Aug. 4	C. B. Vaughn, Silver Lake.	9.04
Aug. 1	Citizen's Drug Store, Mosinee.	7.75	Aug. 4	Dalton & Leiting, Silver Lake.	8.87
Aug. 2	W. A. Liese, Marshfield.	8.27	Aug. 5	Gruett Drug Co., Merrill.	8.95
Aug. 2	Sutherland's Pharmacy, Hudson.	0.17	Aug. 5	Braun's Drug Store, Merrill.	7.7
Aug. 3	Moody-Eaker-Elliott Co., Ellsworth.	8.28	Aug. 7	C. A. Love, Luck.	8.22

DRUGS—Continued.

Spirit of Camphor, Deficient—Continued.

Date	Purchased of	Grams camphor per 100 ccs.	Date	Purchased of	Grams camphor per 100 ccs.
1916					
Aug. 11	R. J. Lustaker, Antigo.....	7.88	Oct. 10	Kaiser's Drug Store, Milwaukee.....	5.15
Aug. 15	Priest's Pharmacy, Superior.....	7.91	Oct. 10	Coleman Drug Co., Milwaukee.....	6.4
Aug. 16	Hadley & Hadley, Superior.....	9.2	Oct. 10	J. W. S. Tomkiewicz, Milwaukee.....	8.9
Aug. 16	P. H. Griffin, Ladysmith.....	8.80	Oct. 10	A. C. Schroeder, Milwaukee.....	2.4
Aug. 18	J. E. Kylo, South Superior.....	6.15	Oct. 10	Wright Drug Co., Milwaukee.....	5.65
Aug. 22	G. Bugge, Superior.....	9.1	Oct. 10	F. A. Wenzel, Milwaukee.....	8.85
Aug. 23	Crabb-Giese Co., Ashland.....	7.92	Oct. 10	Prentice Drug Co., Milwaukee.....	4.46
Aug. 23	Ashland Pharmacy, Ashland.....	8.69	Oct. 10	J. S. Gaudynski, Milwaukee.....	7.75
Aug. 25	Martin E. Titus, Edgerton.....	9.20	Oct. 10	E. A. Hempe, Milwaukee.....	8.20
Aug. 25	Colby Drug Store, Colby.....	8.93	Oct. 10	A. Bellevue, Blair.....	8.84
Aug. 31	North Side Drug Store, Racine.....	8.08	Oct. 11	L. H. Kressin, Milwaukee.....	8.65
Aug. 31	Kradwell Drug Co., Racine.....	7.40	Oct. 11	Max Bartel, Milwaukee.....	8.4
Sept. 13	G. C. Groezinger, Bangor.....	9.23	Oct. 11	H. S. Kopf, Milwaukee.....	8.1
Sept. 14	Winkel's Drug Store, Peshtigo.....	8.54	Oct. 11	Ruenzel's Pharmacy, Milwaukee.....	9.25
Sept. 14	Ella D. Kruger, Prentice.....	8.25	Oct. 11	Zimmerman Pharmacy, Milwaukee.....	8.58
Sept. 18	R. B. Arnold, Lake Geneva.....	9.10	Oct. 11	Otto C. Nessa, Osseo.....	8.50
Sept. 18	W. H. Hammersley, Lake Geneva.....	8.16	Oct. 12	Max J. Goetz, Milwaukee.....	9.18
Sept. 19	F. G. Walker, Appleton.....	9.15	Oct. 12	Oscar H. Stoltz, Milwaukee.....	7.73
Sept. 20	Morris H. Hall, Wilmet.....	8.12	Oct. 12	Baehenroth's Drug Shop, Milwaukee.....	7.13
Sept. 20	Otto Bobarz, Eau Claire.....	9.00	Oct. 12	Schneider's Drug Store, Milwaukee.....	7.26
Sept. 21	Curran's Drug Store, Eau Claire.....	7.82	Oct. 12	Unity Drug Co., Taylor.....	6.40
Sept. 22	A. W. Bock, Sheboygan.....	9.18	Oct. 13	Durr's Pharmacy, Milwaukee.....	9.35
Sept. 22	M. Joeschner, Salem.....	6.75	Oct. 13	L. G. Lau, Milwaukee.....	6.58
Sept. 23	Gallagher's Pharmacy, Shawano.....	8.12	Oct. 13	W. J. Scheltzinger, Milwaukee.....	9.77
Sept. 23	F. L. Hinman & Co., Rhinelander.....	8.67	Oct. 13	Neher's Drug Store, Milwaukee.....	8.76
Sept. 29	Theo. Mueller, West Allis.....	7.00	Oct. 13	J. Goldilieg, Milwaukee.....	9.0
Sept. 29	M. E. Barnett & Co., Neenah.....	8.56	Oct. 13	Tenth Ward Drug Co., Milwaukee.....	6.62
Oct. 5	The Sherman-Catlin Drug Co., New Richmond.....	9.35	Oct. 16	C. A. Begun, La Crosse.....	8.46
Oct. 6	Clarence Brown, Walworth.....	6.41	Oct. 16	Hoeschler Bros., La Crosse.....	8.84
Oct. 9	Goodloe Pharmacy, Milwaukee.....	9.3	Oct. 24	Bauman's Drug Store, Oshkosh.....	9.23
Oct. 10	F. F. Kane, Milwaukee.....	7.9	Oct. 24	S. M. Reinardy Co., Burlington.....	8.37
Oct. 10	C. F. Lederer, Milwaukee.....	8.15	Oct. 26		9.10

Oct. 26	Burlington Drug Co., Burlington.	7.99	4	T. W. Meisner, Milwaukee.	8.76
Oct. 27	Mellen Drug Store, Mellen.	7.13	Jan. 5	John Potts, Cedar Grove.	5.43
Oct. 30	Becker's Pharmacy, Oshkosh.	9.14	Jan. 9	F. I. Finch & Co., Union Center.	9.54
Nov. 1	E. J. Burnside, Ripon.	8.33	Jan. 9	Dix Bros., Elroy.	8.97
Nov. 1	Grote's Drug Store, Mauston.	7.43	Jan. 9	F. A. Florine & Co., Cuba City.	9.188
Nov. 1	The Galvin Pharmacy, Mauston.	8.97	Jan. 9	Barker Bros., Cuba City.	8.989
Nov. 2	Grimmer Drug Co., Mauston.	9.06	Jan. 10	John W. Heldeman, Amherst.	9.358
Nov. 6	Mason Mercantile Co., Mason.	6.49	Jan. 29	Popp & Rathier, Green Bay.	8.635
Nov. 10	O. N. Falk & Son, Stoughton.	9.31	Feb. 1	H. B. McConochie, Waupun.	8.54
Nov. 14	Jos. Le Fevre, Pulaski.	9.18	Feb. 7	W. E. Flatley, Green Bay.	8.635
Nov. 14	M. H. Stuelke Drug Co., Kilbourn.	9.36	Feb. 8	Clinic Pharmacy, Green Bay.	8.866
Nov. 21	Fox Bros. Drug Store, Washburn.	9.02	Feb. 16	Larson Drug Company, Blue Lake.	9.398
Nov. 24	Wm. W. Sebald, Manawa.	9.07	Mar. 1	Look's Drug Store, New London.	8.971
Nov. 27	Bert Schwanberg, Wausau.	9.27	Mar. 6	Moody-Baker-Elliott Co., Ellsworth.	8.544
Nov. 27	W. A. Laege, Wausau.	8.52	Mar. 7	Rob. Roberts, Elmwood.	8.549
Nov. 28	R. J. Luetsker, Antigo.	8.33	Mar. 12	Brown's Pharmacy, Walworth.	8.418
Dec. 8	L. A. McKnight Drug Co., Fond du Lac.	9.27	Mar. 13	Ford's Drug Store, Genoa Junction.	8.97
Dec. 28	Reliable Drug Co., Janesville.	9.36	Mar. 20	Jackson & Tuttle, Soldiers Grove.	8.76
Dec. 28	Badger Drug Co., Janesville.	9.18	Mar. 22	Aug. J. E. Benn, Medford.	8.76
1917			Mar. 23	Suits Bros., Medford.	5.77
Jan. 4	Herman F. Schwarz, Milwaukee.	9.31	April 20	Netzel's Pharmacy, Crandon.	6.92
Jan. 4	M. E. Trtus & J. E. Simons, Milwaukee.	9.31	April 30	Albert Woseliga, Hagen.	8.54
Jan. 4	Herman L. Emmerich, Milwaukee.	8.54	May 4	C. A. Abbott, Chetek.	8.72
			June 13	F. O. Stratton, Waupaca.	

DRUGS—Continued.

Spirit of Camphor—Not Standard.

Below Standard in Camphor and Contains Added Water.

Date	Purchased of	Grams of camphor per 100 ccs.	Strength by volume of alcohol used, per cent	Date	Purchased of	Grams of camphor per 100 ccs.	Strength by volume of alcohol used, per cent
1916							
July 24	Alfred Kristiansen, Stanley.....	8.55	82.83	Oct. 11	Louis Lotz, Milwaukee.....	7.35	68.2
Aug. 7	H. E. Kluetz, Merrill.....	8.85	91.7	Oct. 16	H. L. Partridge & Co., La Crosse.....	8.63	88.67
Aug. 15	A. E. Hohnberg Drug Co., Superior.....	8.0	87.3	Oct. 25	A. J. Boden, Clinton.....	9.23	92.83
Aug. 31	Gieseler's Pharmacy, Racine.....	7.23	76.42	Oct. 30	Humbird Drug Co., Humbird.....	8.24	80.03
Sept. 19	R. O. Lowell, Appleton.....	8.55	87.0	Nov. 3	R. O. Schoen, Markesan.....	7.52	92.05
Sept. 21	W. L. Nichols, Eau Claire.....	3.84	71.2	Nov. 22	A. E. Hohnberg Drug Co., Superior.....	8.64	92.03
Sept. 22	Chas. Sheblak, Appleton.....	5.75	90.4	Dec. 4	H. E. Wollendorf, Fond du Lac.....	5.67	72.14
Sept. 23	F. Flintrap, West Allis.....	2.69	70.97	Dec. 20	Bauer & O'Neill, Kilbourn.....	4.355	84.64
Sept. 29	T. R. Morris, South Milwaukee.....	8.76	81.36	Dec. 26	Foster Mercantile Co., Salem.....	8.54	86.15
Sept. 29	O. P. Williams, Neenah.....	3.0	85.7				
Oct. 4	People's Drug Store, Park Falls.....	8.65	92.86	1917			
Oct. 5	Goldsmith Pharmacy, Milwaukee.....	5.0	89.9	Jan. 4	Ed. Kettler, Milwaukee.....	6.32	91.81
Oct. 9	Boston Store, Milwaukee.....	7.53	92.0	Jan. 5	J. C. Saxton, Clear Lake.....	8.54	86.15
Oct. 10	Richardson Drug Co., Milwaukee.....	8.25	91.5	Jan. 22	J. W. Gates, Ft. Atkinson.....	8.89	91.14
Oct. 11	Sperry-Fennell & Co., Phillips.....	9.14	89.34	April 25	E. C. Lichte, South Milwaukee.....	8.63	86.90
Oct. 11	J. Rossbach, Milwaukee.....	7.8	75.83				

Spirit of Camphor—Not Standard.

Above Standard in Camphor.

Date	Purchased of	Grams of camphor per 100 ccs.	Date	Purchased of	Grams of camphor per 100 ccs.
1916					
July 1	G. E. Amidon, Granton.	15.0	Oct. 5	W. W. Beebe, New Richmond.	11.8
July 13	R. J. Sarasy, Footville.	11.06	Oct. 9	Central Drug Co., Milwaukee.	11.6
July 14	Geo. Hildebrandt, Bassetts.	14.7	Oct. 9	A. Spiegel Co., Milwaukee.	11.65
July 19	E. B. Helmstreet, Palmira.	13.16	Oct. 11	Otto C. Laabs, Milwaukee.	11.15
Aug. 2	City Drug Store, Iron River.	13.0	Oct. 11	A. F. B. Mentzel, Milwaukee.	11.15
Aug. 7	C. E. Fowler, Merrill.	10.9	Oct. 11	Schulz's Drug Store, Milwaukee.	11.4
Aug. 7	P. M. Kling, Whitewater.	11.02	Oct. 12	Kesten & Haertlein, Milwaukee.	11.19
Aug. 8	M. O. Braaton, Whitewater.	11.20	Oct. 12	Burn's Pharmacy, Milwaukee.	11.70
Aug. 11	John McCarthy, Antigo.	11.7	Oct. 13	A. Hafemann, Belleville.	11.83
Aug. 14	E. D. Silvernail, Island Lake.	12.6	Oct. 16	Red Cross Pharmacy, Prairie du Chien.	11.0
Aug. 15	De Frasn's Pharmacy, Superior.	12.92	Oct. 18	E. M. McIntosh, Alma Center.	11.3
Aug. 15	P. A. Lignell Co., Superior.	11.0	Oct. 20	Williams & Johnson, Merrillan.	11.58
Aug. 16	Spaidel & Spaidel, Ladysmith.	11.52	Oct. 23	Ray O. Fischer, Jefferson.	11.32
Aug. 18	W. R. Hathaway, South Superior.	12.04	Oct. 26	Frank T. Tobin, Burlington.	12.56
Aug. 19	A. A. Campbell, Superior.	10.81	Nov. 1	F. W. Diedrich, Ripon.	10.89
Aug. 22	D. H. McElmury, Stanley, R. 3.	10.9	Nov. 1	People's Drug Store, Black River Falls.	10.85
Aug. 23	People's Pharmacy, Superior.	11.20	Nov. 1	W. S. Arnold, Augusta.	11.49
Aug. 23	Warner Bros., Ashland.	10.94	Nov. 1	Chas. Livesey, Augusta.	11.28
Aug. 24	Weed's Drug Store, Ashland.	10.84	Nov. 20	Ashland Pharmacy, Ashland.	12.16
Aug. 28	Nelson Produce & Mercantile Co., Conrath.	13.80	Dec. 4	Hoehn's Pharmacy, Fall Creek.	11.82
Aug. 30	W. S. Lamb, Kenosha.	10.9	Dec. 5	F. V. Masliko, Fond du Lac.	17.80
Aug. 31	Red Cross Drug Co., Racine.	13.80	1917		
Sept. 5	Albert Wang, Cumberland.	11.08	Jan. 4	Ed. Kettler, Milwaukee.	11.11
Sept. 9	Will R. Thorp, Milton Junction.	11.02	Jan. 16	R. K. Fowler, Wilton.	10.82
Sept. 14	Seyreth's Drug Store, Wittenberg.	11.83	Feb. 7	F. G. Tanck, Delavan.	11.06
Sept. 19	Geo. K. Mills, Hazel Green.	11.2	Mar. 14	Geo. A. Miller, Oadott.	11.02
Sept. 23	F. C. Buerstatte, Manitowoc.	10.8	Mar. 22	H. J. Desbrelmer & Co., Ft. Atkinson.	11.86
Sept. 26	O. A. Schrant, Sheboygan.	12.17	Mar. 23	Schlei Drug Co., Ft. Atkinson.	10.90
Sept. 26	C. F. Kirst, Two Rivers.	11.53	Mar. 23	S. T. Barnard, Brillion.	11.07
Sept. 27	C. E. Hoffman, Port Washington.	12.1	Mar. 30	Reinhardt & Frigina, Fountain City.	10.86
Oct. 4	Schultz Bros., Menasha.	11.32	April 6	Ferd B. Wendt, Juneau.	10.81
Oct. 4	Crocker's Drug Store, New Richmond.	14.0			

DRUGS—Continued.

Spirit of Camphor—Not Standard—Continued.

Above Standard in Camphor and Contains Added Water.

Date	Purchased of	Grams of camphor per 100 ccs.	Strength by volume of alcohol used, per cent	Date	Purchased of	Grams of camphor per 100 ccs.	Strength by volume of alcohol used, per cent
1916				1917			
Sept. 15	O. W. Bosshard, Mattoon.....	11.41	90.7	Feb. 1	Heberlein's Drug Store, Livingston.....	10.9	88.86
Sept. 19	Schlitz Bros., Appleton.....	16.6	88.52	Feb. 2	W. B. Winslow, Sarona.....	16.32	91.81
Sept. 19	Union Pharmacy, Appleton.....	13.3	91.2	April 5	W. C. Boldt, Menomonee Falls.....	12.86	89.72
				April 10	Whitman Pharmacy, Hurley.....	11.45	65.65
				April 27	Webster Drug Co., Webster.....	12.61	90.61

Spirit of Camphor—Not Standard—Continued.

Contains Added Water.

Date	Purchased of	Strength by volume of alcohol used, per cent	Date	Purchased of	Strength by volume of alcohol used, per cent
1916					
July 24	A. M. Berg, Stanley.....	92.86	Aug. 2	Denis' Pharmacy, Nekoosa.....	88.73
July 25	Red Cross Drug Store, Arcadia.....	92.12	Aug. 5	F. C. Zemlika, Merrill.....	92.6
July 25	Danner's Pharmacy, Arcadia.....	86.25	Aug. 7	Lemcke Drug Co., Merrill.....	90.93
July 28	R. E. Arnold, Fairchild.....	87.52	Sept. 2	F. H. Eisold, Athens.....	92.4
July 31	Reinhardt & Frigina, Fountain City.....	88.76	Sept. 19	Downer's Pharmacy, Appleton.....	92.42

Sept. 19	Roemer & Belling, Appleton.....	90.23	Nov. 27	H. E. Kuetz, Merrill.....	92.68
Sept. 29	North Side Drug Store, Racine.....	81.12	Dec. 8	Daly's Drug & Jewelry Store, Neenah.....	77.89
Oct. 10	Kryger's Drug Store, Milwaukee.....	89.96			
Oct. 11	W. C. Hebb, Milwaukee.....	92.83	1917		
Oct. 12	J. J. Poeschl, Milwaukee.....	76.73	Jan. 19	W. G. Correll, Spring Green.....	91.02
Oct. 12	Keston & Haertlein, Milwaukee.....	74.93	Jan. 19	P. M. Berg, Stone Lake.....	92.30
Oct. 13	Herman Valet, Milwaukee.....	82.66	April 11	W. W. Landberg, Glenwood City.....	91.84
Nov. 13	F. L. Seulling, Minocqua.....	92.24	May 10	C. F. Wilske, Turtle Lake.....	92.21

DRUGS—Continued.

Tincture Iodi (Tincture of Iodine).

Tincture of iodine, according to the latest edition of the U. S. Pharmacopoeia, is a solution of 7 grams of iodine and 5 grams of potassium iodide in sufficient alcohol to make 100 ccs. of the finished product, and when titrated with tenth normal sodium thio-sulphate, shall contain not less than 6.5 grams nor more than 7.5 grams of iodine per 100 ccs. and not less than 4.5 grams nor more than 5.5 grams of potassium iodide per 100 ccs.

DRUGS—Continued.

Tincture of Iodine—Standard.

Date	Purchased of	Date	Purchased of
1916			
July 1	G. E. Amiden, Granton.	Sept. 21	Braudstad Drug Co., Eau Claire.
July 10	Ganey's Pharmacy, Prairie du Chien.	Sept. 21	Otto Boberg, Eau Claire.
July 13	R. J. Sarasy, Footville.	Sept. 22	Chas. Sheblak, Appleton.
July 14	C. G. Ford, Twin Lakes.	Sept. 26	Foster Mercantile Co., Salem.
July 17	Red Cross Pharmacy, Prairie du Chien.	Sept. 27	L. G. Bemis & Son, Birchwood.
July 19	E. B. Helmstreet, Palmyra.	Sept. 27	Elecho Drug Co., Elcho.
July 24	F. M. Charlesworth, Kaukauna.	Sept. 28	Williams' Drug Store, Shawano.
July 25	Danuser's Pharmacy, Arcadia.	Sept. 29	E. G. Jones, West Allis.
July 25	Red Cross Drug Store, Arcadia.	Sept. 29	Theo. Mueller, West Allis.
July 27	H. R. Jackson, Westby.	Sept. 29	T. R. Morris, South Milwaukee.
July 28	L. A. LeMieux, Seymour.	Sept. 29	Avenue Drug Store, South Milwaukee.
July 31	Dr. H. V. King, Pepin.	Oct. 3	F. M. Charlesworth, Kaukauna.
Aug. 2	Sexton's Prescription Store, Marshfield.	Oct. 4	John Rosch, Menasha.
Aug. 2	W. A. Liese, Marshfield.	Oct. 4	Elmer's Pharmacy, Neenah.
Aug. 3	Moody-Baker-Elliott Co., Ellsworth.	Oct. 5	The Grinnell-Rounsaville, New Richmond.
Aug. 3	A. Swahn & Co., Ellsworth.	Oct. 6	City Drug Store, Park Falls.
Aug. 4	A. R. Nash Co., East Ellsworth.	Oct. 6	E. J. Booth, Walworth.
Aug. 5	Braun's Drug Store, Merrill.	Oct. 6	Clarence Brown, Walworth.
Aug. 7	Lemcke Drug Co., Merrill.	Oct. 9	Abe Brown, Milwaukee.
Aug. 7	H. E. Kluetz, Merrill.	Oct. 9	O. A. Thielke, Milwaukee.
Aug. 8	M. O. Braaten, Whitewater.	Oct. 9	C. H. Krause, Milwaukee.
Aug. 10	L. A. Duffin & Co., Whitewater.	Oct. 9	Wells Building Drug Co., Milwaukee.
Aug. 11	R. J. Leutscher, Antigo.	Oct. 9	Gimbel Bros., Milwaukee.
Aug. 11	A. A. Lueck, Antigo.	Oct. 10	F. A. Wenzel, Milwaukee.
Aug. 15	Otto E. Rydell, Superior.	Oct. 10	A. Spiegel Co., Milwaukee.
Aug. 15	P. A. Lignell Co., Superior.	Oct. 10	Wright Drug Co., Milwaukee.
Aug. 15	Cameron's Pharmacy, Superior.	Oct. 10	C. F. Lederer, Milwaukee.
Aug. 16	Mooney's Pharmacy, Ladysmith.	Oct. 10	A. Bellevue, Blair.
Aug. 16	P. H. Griffin, Ladysmith.	Oct. 11	Sperry-Fenelon & Co., Phillips.
Aug. 17	Abby's Pharmacy, Superior.	Oct. 11	Otto C. Nessa, Oosso.
Aug. 21	L. Jensen, Cameron.	Oct. 11	Zimmerman Pharmacy, Milwaukee.
Aug. 21	Idjariak-Hahnberg Drug Co., Superior.	Oct. 11	Otto C. Laabs, Milwaukee.
Aug. 23	Ashland Pharmacy, Ashland.	Oct. 11	Ruenzel's Pharmacy, Milwaukee.
Aug. 23	Woodhead Drug Store, Ashland.	Oct. 11	Widule's Drug Store, Milwaukee.
Aug. 25	Colby Drug Store, Colby.	Oct. 12	Max J. Goetz, Milwaukee.
Aug. 25	Dean Swift, Edgerton.	Oct. 12	J. J. Possehl, Milwaukee.
Aug. 25	Martin E. Titus, Edgerton.	Oct. 12	Burns Pharmacy, Milwaukee.
Aug. 25	W. W. Albers, Wausau.	Oct. 12	H. J. Stoltz, Milwaukee.
Aug. 25	K. H. Pagenkopf, Wausau.	Oct. 12	H. A. Scott, Milwaukee.
Aug. 30	C. H. Hurd, Kenosha.	Oct. 12	Vogel's Pharmacy, Milwaukee.
Aug. 30	Mayer Pharmacy, Kenosha.	Oct. 12	Mueller Pharmacies, Milwaukee.
Aug. 30	A. E. Olle, Kenosha.	Oct. 12	Kesten & Haertlein, Milwaukee.
Aug. 31	North Side Drug Store, Racine.	Oct. 12	J. P. Otten, Milwaukee.
Aug. 31	Heck's 20th Century Drug Store, Racine.	Oct. 13	Dr. Ernest A. Petzke, Hixton.
Sept. 1	Russell's Drug Store, Racine.	Oct. 13	L. G. Lau, Milwaukee.
Sept. 5	Albert Wang, Cumberland.	Oct. 13	W. F. Lambeck, Milwaukee.
Sept. 5	Hopkin's Drug Store, Cumberland.	Oct. 13	Kiehm Pharmacy, Milwaukee.
Sept. 9	Will R. Thorp, Milton Junction.	Oct. 16	A. Bellerus, La Crosse.
Sept. 14	Duncan, The Druggist, Stoughton.	Oct. 16	Hoeschler Bros., La Crosse.
Sept. 14	Winkel's Drug Store, Tigerton.	Oct. 16	C. A. Begun, La Crosse.
Sept. 15	O. W. Bosshard, Mattoon.	Oct. 16	C. Beyschlag, La Crosse.
Sept. 18	Wm. H. Hammersley, Lake Geneva.	Oct. 18	C. L. Lien, La Crosse.
Sept. 18	Morris H. Hall, Wilmot.	Oct. 23	Harry Koerner, Jefferson.
Sept. 19	Downer's Pharmacy, Appleton.	Oct. 23	Ray O. Fischer, Jefferson.
Sept. 19	Roemer & Belling, Appleton.	Oct. 24	John Brennan, Oshkosh.
		Oct. 24	White Cross Drug Co., Oshkosh.
		Oct. 26	Burlington Drug Co., Burlington.
		Oct. 26	Frank T. Tobin, Burlington.
		Oct. 26	Dallmann Drug Co., Edgerton.

DRUGS—Continued.

Tincture of Iodine—Standard—Continued.

Date	Purchased of	Date	Purchased of
Oct. 31	F. W. Lambrecht, Berlin.	Jan. 25	Chris. Gilgen, Dalton.
Nov. 1	The Peoples Drug Store, Black River Falls.	Jan. 29	S. M. Kersten, Green Bay.
Nov. 1	P. J. Comer, Mauston.	Jan. 29	Neven & Holzer, Green Bay.
Nov. 1	The Galvin Pharmacy, Mauston.	Jan. 29	Luckenbock's Pharmacy, Green Bay.
Nov. 1	Chas. Livesey, Augusta.	Jan. 29	Corner Drug Store, Green Bay.
Nov. 3	R. O. Schoen, Markesan.	Jan. 31	J. E. Roberts & Co., Cambria.
Nov. 6	Scheldrup Drug Co., Stoughton.	Feb. 1	H. B. McConochie, Waupun.
Nov. 13	F. L. Schilling, Minocqua.	Feb. 1	Heberlein's Drug Store, Livingston.
Nov. 14	M. H. Stuelke Drug Co., Kilbourn.	Feb. 8	Meyer Pharmacal Co., Rosholt.
Nov. 20	Weed's Drug Store, Ashland.	Feb. 9	J. E. Simpson, Endeavor.
Nov. 22	DeFrehn's Pharmacy, Superior.	Feb. 12	Burns Drug Co., Oakfield.
Nov. 22	A. E. Holmberg Drug Co., Superior.	Feb. 13	J. S. Pierson & Son, Trempealeau.
Nov. 23	Louis Moersch, Elkhart Lake.	Feb. 14	Mayer Drug Store, Kaukauna.
Nov. 24	J. C. F. Bullock, Manawa.	Feb. 16	R. K. Fowler, Wilton.
Nov. 27	C. E. Fowler, Merrill.	Feb. 16	E. A. Lange, West DePere.
Nov. 27	T. O. Town, Shiocton.	Feb. 23	Kaukauna Drug Co., Kaukauna.
Dec. 4	Hoehn's Pharmacy, Fall Creek.	Feb. 26	H. I. Wheeler, East DePere.
Dec. 7	McCarthy Drug Co., Fond du Lac.	Mar. 5	Sharon Pharmacy, Sharon.
Dec. 8	Ward's Pharmacy, Necedah.	Mar. 6	R. S. Young, Darlen.
Dec. 8	L. A. McKnight Drug Co., Fond du Lac.	Mar. 7	Jackson & Jackson, Delavan.
Dec. 11	Boston Drug Store, Menomonie.	Mar. 7	L. A. Christiansen, Baldwin.
Dec. 11	Cunningham's Drug Store, Lone Rock.	Mar. 8	Woslm Drug Co., Elkhorn.
Dec. 15	W. H. Rethwill, Clayton.	Mar. 12	Brown's Pharmacy, Walworth.
Dec. 28	Morrison's Pharmacy, Barron.	Mar. 12	E. J. Booth, Walworth.
Dec. 28	Speidel & Speidel, Ladysmith.	Mar. 14	W. J. Pierce, Cadott.
1917		Mar. 15	Alfred Kristiansen, Stanley.
Jan. 4	M. E. Titus & J. E. Simons, Milwaukee.	Mar. 16	Guinn Bros., Hannibal.
Jan. 4	Herman L. Emmerich, Milwaukee.	Mar. 16	Ackerman Drug Co., Gays Mills.
Jan. 4	Bishop & Livesey, Wonewoc.	Mar. 20	Jackson & Tuttle, Soldiers Grove.
Jan. 4	A. Luethe, Milwaukee.	Mar. 21	Tomahawk Drug Co., Tomahawk.
Jan. 5	F. I. Finch & Co., Union Center.	Mar. 21	A. H. Erickson, Soldiers Grove.
Jan. 10	John W. Beidleman, Amherst.	Mar. 21	J. J. Lorge, Eagle.
Jan. 12	J. W. Boynton & Son, Amherst.	Mar. 22	H. J. Dexheimer & Co., Ft. Atkinson.
Jan. 12	Hoeveler Drug Co., Waukesha.	Mar. 24	C. F. Mathews, Viola.
Jan. 15	F. O. Fisher, Beloit.	Mar. 26	Alex. Johnson, West Salem.
Jan. 16	Bennett's Pharmacy, Friendship.	Mar. 27	F. E. Palmer, Bangor.
Jan. 18	H. J. Luethe, Random Lake.	Mar. 27	Jos. F. Wisner, La Farge.
Jan. 18	W. G. Correll, Spring Green.	Mar. 29	F. L. Schilling, Minocqua.
Jan. 9	Barker Bros., Cuba City.	April 10	J. F. Sullivan, Hurley.
Jan. 20	G. T. Pace, Adams.	May 1	W. S. Hess, Cazenovia.
Jan. 22	A. A. Rock, Bancroft.	May 4	C. A. Abbott, Chetek.
Jan. 23	L. S. Walker Co., Almond.	May 10	C. F. Wilske, Turtle Lake.
Jan. 24	Frank Mueller, Princeton.	June 6	Schultz Bros., Menasha.
Jan. '95	H. B. B. Poppe, Wautoma.	June 11	Edw. C. Miller, Kewaskum.
Jan. 24	B. F. de Hosson, Green Lake.	June 13	F. O. Stratton, Waupaca.
		June 13	Hocking Bros., Waupaca.
		June 14	J. C. F. Bullock, Manawa.
		June 14	City Drug Store, Iola.
		June 25	J. W. Gates, Ft. Atkinson.

DRUGS—Continued.

Tincture of Iodine—Not Standard.

Deficient in Iodine.

Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.	Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.
1916							
June 28	C. C. Snitman Co., Nellisville.....	4.97	4.80	Oct. 12	Wm. Hicke, Milwaukee.....	5.46	4.83
July 7	F. G. Pomeroy, Weyerhauser.....	6.00	5.53	Oct. 13	Neher's Drug Store, Milwaukee.....	5.11	5.20
July 28	Central Drug Store, Seymour.....	6.06	4.82	Oct. 16	Dix Bros., Elroy.....	6.04	5.13
Aug. 2	E. E. Gatchell, Hudson.....	6.09	4.48	Oct. 18	F. M. McIntosh, Alma Center.....	5.67	4.93
Aug. 5	Gruett Drug Co., Merrill.....	6.06	4.73	Oct. 26	S. M. Rehnard Co., Burlington.....	5.86	4.77
Aug. 11	Gauthier's Drug Store, Antigo.....	6.06	4.976	Nov. 15	C. C. Snitman Co., Nellisville.....	6.04	4.786
Aug. 31	Kradwell Drug Co., Racine.....	3.97	4.63	Nov. 25	F. C. Zemulka, Merrill.....	6.15	5.062
Aug. 31	Faucher Medicine Co., Racine.....	3.81	5.14				
Aug. 31	Red Cross Drug Co., Racine.....	5.96	5.09				
Sept. 19	F. G. Walker, Appleton.....	5.82	4.80	Feb. 19	N. W. Heintz, Rice Lake.....	6.32	5.47
Oct. 3	Kaukauna Drug Co., South Kaukauna.....	5.96	4.57	Mar. 6	Sutherland's Pharmacy, Hudson.....	6.23	5.59
Oct. 5	People's Drug Store, Park Falls.....	5.14	4.94	Mar. 29	Van Wies's Pharmacy, Tomah.....	5.23	5.004
Oct. 9	A. Spiegel Co., Milwaukee.....	5.76	4.70	June 13	A. W. Sloggy, Ontario.....	6.11	4.86
Oct. 10	F. F. Kane, Milwaukee.....	5.71	4.76	June 13	O. A. Spencer, Waupaca.....	6.32	4.60
Oct. 10	Krygier's Drug Store, Milwaukee.....	5.85	5.43				

Deficient in Iodine and Potassium Iodide.

Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.	Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.
1916							
July 14	H. Horn, Loyal.	3.35	1.25	Oct. 11	A. J. Loepfe, Milwaukee.	5.22	4.30
Aug. 1	Citizen's Drug Store, Mosinee.	4.30	2.22	Oct. 12	Purity Drug Co., Taylor.	6.05	3.20
Aug. 2	Sutherland's Pharmacy, Hudson.	6.09	4.07	Oct. 12	Diller's Pharmacy, Milwaukee.	4.77	3.44
Aug. 5	R. J. Strauss, Marshfield.	5.22	none	Oct. 12	Oscar H. Stoltz, Milwaukee.	6.18	4.31
Aug. 8	F. G. Zemlka, Merrill.	5.78	3.09	Oct. 12	Schneider's Drug Store, Milwaukee.	5.54	2.54
Aug. 15	Hadley & Hadley, Superior.	5.11	1.41	Oct. 13	W. J. Schaffinger, Milwaukee.	4.76	2.56
Aug. 15	A. F. Hahnberg Drug Co., Superior.	5.91	2.39	Oct. 13	Hermann Valet, Milwaukee.	5.92	3.60
Aug. 17	DeFrehn's Pharmacy, Superior.	4.08	1.046	Oct. 13	S. D. Berg, Milwaukee.	5.50	4.26
Aug. 17	Odin Drug Store, Superior.	5.85	4.7	Oct. 13	J. Goldbertz, Milwaukee.	5.16	0.12
Aug. 17	A. J. Klotz, Montfort.	5.61	1.37	Oct. 16	J. W. Wichtman, Elroy.	6.26	3.70
Aug. 18	W. R. Hathaway, South Superior.	3.76	none	Oct. 21	Curran's Drug Store, Eau Claire.	5.16	2.99
Aug. 22	Peoples Pharmacy, Superior.	5.15	4.03	Oct. 27	Mellen Drug Store, Mellen.	6.00	4.33
Aug. 23	Crabb-Gleese Co., Ashland.	5.05	3.33	Oct. 30	Humbird Drug Co., Humbird.	5.58	4.04
Aug. 25	Dallmann Drug Co., Edgerton.	5.37	3.35	Oct. 31	Neumann & Hoyer, Berlin.	5.22	2.62
Sept. 14	Ella D. Kruger, Prentice.	5.34	4.3	Nov. 1	E. J. Burnside, Ripon.	4.00	none
Sept. 19	Volgt's Drug Store, Appleton.	6.1	3.73	Nov. 1	City Drug Store, Ripon.	4.38	3.04
Sept. 23	Fred H. Gadsby, Eau Claire.	4.55	2.58	Nov. 1	Grimmer Drug Co., Mauston.	5.95	none
Sept. 27	C. E. Hoffman, Port Washington.	5.65	0.826	Nov. 1	Grotes Drug Store, Mauston.	5.70	none
Sept. 29	E. F. Flintrop, West Allis.	2.57	2.17	Nov. 23	Hadley & Hadley, Superior.	4.94	1.35
Sept. 29	Corliss Drug Co., Corliss.	4.82	2.16	Dec. 7	People's Pharmacy, Superior.	5.16	4.00
Oct. 4	C. E. Williams, Neenah.	2.77	none	Dec. 7	H. Horn, Loyal.	6.07	3.57
Oct. 9	Goldsmith Pharmacy, Milwaukee.	5.69	3.66	Dec. 11	Grotes Drug Store, Mauston.	5.70	0.0007
Oct. 9	Schradner Drug Co., Milwaukee.	5.83	3.91	1917			
Oct. 9	Waisow Drug Co., Milwaukee.	4.70	2.05	Jan. 4	Ed. Kettles, Milwaukee.	2.15	3.26
Oct. 9	A. Spiegel Co., Milwaukee.	2.93	1.582	Jan. 4	Herman F. Schwarz, Milwaukee.	2.56	0.53
Oct. 9	Goodloe Pharmacy, Milwaukee.	6.30	3.06	Feb. 20	Ralph Lovell, Little Chute.	6.28	2.82
Oct. 9	Esser Bros, Milwaukee.	5.97	3.09	Feb. 26	W. F. Watley, Green Bay.	4.10	2.83
Oct. 10	J. S. Gaudynski, Milwaukee.	5.72	none	Mar. 13	Port's Drug Store, Genoa Junction.	6.27	4.03
Oct. 10	F. A. Henpe, Milwaukee.	4.33	3.166	Mar. 21	Standard Mercantile Co., Tomahawk.	6.33	3.68
Oct. 10	Prentice Drug Co., Milwaukee.	5.32	2.65	Mar. 22	Aug. J. E. Benn, Medford.	3.24	1.67
Oct. 10	Coleman Drug Co., Milwaukee.	3.83	none	Mar. 22	J. W. Gates, Ft. Atkinson.	4.13	1.47
Oct. 10	Kaiser's Drug Store, Milwaukee.	5.06	2.61	Mar. 29	T. L. McNeely, Wausaukee.	6.16	4.34
Oct. 10	A. C. Schroeder, Milwaukee.	2.01	0.154	April 23	W. H. Kummer, Wauwatosa.	5.48	1.018
Oct. 10	L. G. J. Mack, Milwaukee.	5.8	3.69	April 25	E. C. Lichte, South Milwaukee.	5.81	3.86
Oct. 11	Drake Bros. Co., Milwaukee.	5.73	4.26	April 27	Dr. H. D. Hill, Grand Marsh.	3.16	2.04
Oct. 11	W. C. Heb, Milwaukee.	5.96	4.19	April 30	Albert Woseljka, Haugen.	3.16	2.04
Oct. 11	L. H. Kressin, Milwaukee.	3.18	2.07	June 19	Sweet's Pharmacy, Roberts.	5.77	4.03
Oct. 11	H. S. Kopt, Milwaukee.	4.45	2.42				

DRUGS—Continued.

Tincture of Iodine—Not Standard—Continued.

Deficient in Potassium Iodide.

Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.	Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.
1916							
July 13	J. F. Cance, Ettrick.....	6.91	3.72	Oct. 10	Carl Mooltz, Milwaukee.....	7.27	3.76
July 24	Alfred Kristianson, Stanley.....	6.88	1.53	Oct. 10	J. W. S. Tomkiewicz, Milwaukee.....	6.66	4.16
July 27	Dahl's Drug Store, Viroqua.....	6.60	2.19	Oct. 11	Weissenborn's Pres. Drug Store, Milwaukee.....	7.16	3.68
Aug. 4	C. B. Vaughn, Silver Lake.....	6.97	3.86	Oct. 13	Tenth Ward Drug Co., Milwaukee.....	6.85	2.07
Aug. 7	C. F. Fowler, Merrill.....	7.26	none	Oct. 13	Drug Craft Shop, Milwaukee.....	6.43	none
Aug. 8	H. J. O'Connor, Whitewater.....	6.90	2.45	Oct. 16	Hoechler Bros., La Crosse.....	6.99	2.63
Aug. 10	O. F. Baker & Co., Shell Lake.....	7.58	3.67	Oct. 16	C. L. Lien, La Crosse.....	4.46	3.02
Aug. 11	A. A. Campbell, Superior.....	7.20	3.706	Nov. 1	W. S. Arnold, Augusta.....	6.72	2.51
Aug. 23	Ed. Happenay's Drug Store, Ashland.....	6.47	4.30	Nov. 10	Chas. J. Nicholas, Fenimore.....	7.00	3.29
Aug. 31	Kradwell Drug Co., Racine.....	7.45	4.83				
Sept. 11	Ole Neer, Colfax.....	7.62	3.56	1917			
Sept. 21	Will C. Johnson, Eau Claire.....	7.24	4.0	Jan. 4	F. W. Meisner, Milwaukee.....	6.55	3.228
Sept. 28	Dr. Faucher Medicine Co., Racine.....	6.51	4.22	Jan. 5	J. C. Saxton, Clear Lake.....	7.02	4.804
Sept. 5	W. W. Beebe, New Richmond.....	7.55	4.00	Mar. 7	H. C. Rustad, Delavan.....	7.62	4.06
Oct. 9	Hotel Martin Pharmacy, Milwaukee.....	6.73	3.87	Mar. 23	Suits Bros., Medford.....	6.96	4.11
Oct. 9	Central Drug Co., Milwaukee.....	6.57	3.36	April 6	Fred B. Wendt, Juneau.....	6.70	4.31
Oct. 9	Boston Store, Milwaukee.....	6.78	4.16	April 11	W. W. Lundberg, Glenwood City.....	7.18	3.09
Oct. 10	L. C. Schneider, Milwaukee.....	7.00	4.00				

Tincture of Iodine—Not Standard—Continued.
Above Standard in Iodine and Potassium Iodide

Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.	Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.
1916							
July 28	R. E. Arnold, Fairchild.....	8.06	6.0	Oct. 11	Schulz's Drug Store, Milwaukee.....	10.0	6.31
Aug. 2	City Drug Store (Jewett & Casterline), Iron River.....	17.86	13.98	Oct. 11	A. F. B. Mentzel, Milwaukee.....	8.30	5.80
Aug. 4	Dalton & Letting, Silver Lake.....	11.08	5.95	Oct. 12	Kesten & Haertlein, Milwaukee.....	8.27	5.78
Aug. 16	Spidel & Spidel, Ladysmith.....	7.91	7.91	Oct. 16	Hebbard & Co., La Crosse.....	7.88	7.52
Aug. 18	J. E. Kylo, South Superior.....	7.84	5.74	Dec. 9	Ruh Drug Co., Fond du Lac.....	8.50	5.77
Aug. 24	Weed's Drug Store, Ashland.....	7.94	5.70	1917			
Sept. 9	F. H. Elford, Athens.....	7.81	5.75	Jan. 23	O. Schallern, Ribon.....	8.32	5.75
Sept. 10	Union Pharmacy, Appleton.....	8.93	6.23	Jan. 30	Clinic Pharmacy, Green Bay.....	8.10	5.92
Sept. 27	W. E. Harvey, Excelsior.....	8.67	6.00	Feb. 6	A. J. Klotzka, Montfort.....	9.10	5.90
Oct. 4	M. E. Barnett & Co., Neenah.....	7.67	5.66	Mar. 15	Chas. W. Wolf, Thorp.....	7.84	7.42
Oct. 4	Schultz Bros., Menasha.....	7.97	6.17	Mar. 22	Schiel Drug Co., Ft. Atkinson.....	7.75	5.86
Oct. 5	The Sherman Oatlin Drug Co., New Richmond.....	8.20	7.918	April 10	Whitman Pharmacy, Hurley.....	10.32	9.88
				May 21	N. O. Unseeth, Grantsburg.....	8.19	7.59

Tincture of Iodine—Not Standard—Continued.
Below Standard in Iodine and Above Standard in Potassium Iodide.

Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.	Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.
1916							
July 7	M. Kolb, Lena.....	6.31	5.89	Oct. 19	G. G. Dewey, Glidden.....	6.1	6.21
July 7	Chas. Taylor, Orfordville.....	5.28	6.488	Nov. 22	W. R. Hathaway, South Superior.....	5.10	7.57
July 10	P. W. Gullord, Greenwood.....	6.23	6.50	1917			
Aug. 15	Prest's Pharmacy, Superior.....	6.21	6.066	April 5	W. O. Boldt, Menomonee Falls.....	6.16	7.64
Oct. 4	Crocker Drug Store, Boyesville.....	5.22	5.72				
Oct. 9	Wright Drug Co., Milwaukee.....	6.26	5.87				

DRUGS—Continued.

Tincture of Iodine—Not Standard—Continued.

Above Standard in Iodine and Below Standard in Potassium Iodide.

Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.	Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.
1916				1917			
Sept. 14	Seyferth's Drug Store, Wittenborg.....	8.13	4.30	Jan. 8	N. H. Harley, Waldo.....	8.20	1.554
Oct. 9	A. Spiegel Co., Milwaukee.....	8.24	3.22	Feb. 1	Lewis Ulme, Waupun.....	8.64	2.822
Dec. 11	Olaf Noer, Menomonie.....	7.08	3.104	Mar. 23	S. T. Barnard, Brillion.....	7.77	3.39

Tincture of Iodine—Not Standard—Continued.

Above Standard in Potassium Iodide.

Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.	Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.
1916				Sept. 19	Schlitz Bros., Appleton.....	6.81	6.92
July 25	Red Cross Pharmacy, Spooner.....	7.39	5.9	Oct. 4	Schultz Bros., Neenah.....	7.18	6.38
Aug. 7	Frank B. Wing, Abbottsford.....	7.26	5.81	Oct. 10	Richardson Drug Co., Milwaukee.....	6.51	6.43
Aug. 11	P. M. Kling, Whitewater.....	7.35	5.66	Oct. 11	Louis Loz, Milwaukee.....	7.45	6.40
Aug. 11	John McCarthy, Antigo.....	6.69	5.84	Oct. 13	E. A. Showalter, Milwaukee.....	7.44	5.74
Aug. 15	Abers Drug Store, Antigo.....	7.39	5.90	Oct. 16	Julie's Pharmacy, La Crosse.....	7.44	5.97
Aug. 21	Ryan Pharmacy, Superior.....	7.07	5.97	Oct. 16	H. L. Partridge & Co., La Crosse.....	7.20	5.67
Aug. 21	A. T. McGeorge, Cameron.....	7.51	6.12	Nov. 21	Fox Bros. Drug Store, Washburn.....	6.80	6.60
Aug. 22	D. H. McElmurry, Stanley.....	7.25	6.45	Dec. 20	Bauer & O'Neil, Kilbourn.....	7.25	7.276
Aug. 22	G. Bugge, Superior.....	7.45	5.82				
Aug. 30	Williams Drug Store, Kenosha.....	7.32	6.42				
Aug. 31	Red Cross Drug Co., Racine.....	7.43	6.03	1917			
Aug. 31	Kradwell Drug Co., Racine.....	7.43	7.38	Mar. 20	Kling's Pharmacy, Whitewater.....	6.55	6.71
Sept. 19	R. C. Lowell, Appleton.....	6.61	7.50	April 27	Webster Drug Co., Webster.....	6.70	6.82

Tincture of Iodine—Not Standard—Continued.

Above Standard in Iodine.

Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.	Date	Purchased of	Grams of iodine per 100 ccs.	Grams of potassium iodide per 100 ccs.
1916							
Aug. 4	O. J. Thompson, Whitehall.....	7.83	4.56	Oct. 13	A. Hafeman, Belleville.....	7.67	5.50
Aug. 7	C. A. Love, Luck.....	7.70	5.40	Nov. 3	W. A. Turner, Brandon.....	7.74	5.24
Aug. 23	Warner Bros., Ashland.....	8.33	5.02	Nov. 20	Crabb-Giese Co., Ashland.....	7.91	5.487
Aug. 25	Geo. W. Pradel, Wausau.....	8.08	5.46	Nov. 20	Crabb-Giese Co., Ashland.....	7.94	5.632
Aug. 30	W. S. Lamb, Kenosha.....	7.86	4.4	Nov. 27	O. F. Baker & Co., Shell Lake.....	7.73	5.486
Sept. 29	C. J. Flusche, West Allis.....	7.68	4.6				
Oct. 4	Marsh Bros., Neenah.....	7.67	4.61	1917			
Oct. 10	A. Czerwinski, Milwaukee.....	7.84	5.64	Jan. 4	Jacob Showalter, Milwaukee.....	7.77	5.29
Oct. 11	Max Bartel, Milwaukee.....	7.97	5.34	Jan. 29	Popp & Rathier, Green Bay.....	8.35	4.704
Oct. 11	J. Roszbach, Milwaukee.....	7.98	4.96	Mar. 1	E. C. Molstad, Bldg.....	7.87	5.64
Oct. 12	Baerentzen's Drug Shop, Milwaukee.....	7.97	4.85	Mar. 8	D. S. Crocker, Almena.....	9.85	5.19
Oct. 12	D. Jernst, Milwaukee.....	8.74	4.86	Mar. 14	The Lena Pharmacy, Lena.....	9.89	5.24
Oct. 13	Mueller Pharmacies, Milwaukee.....	7.90	5.53	April 20	C. E. Williams, Neenah.....	8.70	5.62
Oct. 13	B. Schoenkerman, Milwaukee.....	8.53	5.24				

DRUGS—Continued.
Miscellaneous Drugs.

Date	Bought for	Purchased of	Remarks
1916			
June 16	Sal. ethyl	O. W. Boshard, Mattoon.....	No adulteration found.
Aug. 18	Acid acetylo salicylic.....	J. E. Kello, South Superior.....	No adulteration found.
Aug. 28	Liquor potassium arsenites.....	Jas. A. Meller Drug Co., Boscobel.....	Not standard.
Sept. 6	Castor oil	L. A. Busse, Reeseville.....	Sweetened with saccharine and flavored with oil of wintergreen.
Sept. 11	Tincture of iodine decolorized.....	W. G. Blood, Ingram.....	Standard.
Sept. 23	Aceto salicylic acid.....	F. L. Hinman, Rhineland.....	No adulteration found.
Sept. 23	Pure glycerine	F. L. Hinman, Rhineland.....	Standard.
1917			
Mar. 4	Lime water	The Lena Pharmacy, Lena.....	Standard.
Mar. 23	Lime water	St. Barnard, Brillion.....	Standard.
April 20	Extract of witch hazel.....	Netzel's Pharmacy, Crandon.....	Standard.
April 20	Lime water	Netzel's Pharmacy, Crandon.....	Standard.

DRUGS—Concluded.
Submitted Samples.

Date	Submitted for	Submitted by	Remarks
1916			
Aug. 1	Spirit of camphor.....	H. Lappley, Mazomanie.....	Above standard.
Aug. 8	Gum camphor	J. F. Gallagher, Shawano.....	Standard.
Aug. 16	Spirit of camphor.....	F. L. Hinmann, Rhineland.....	Standard.
Sept. 8	Tincture of iodine.....	W. W. Albers, Wausau.....	Standard.
Sept. 27	Tincture of iodine.....	J. E. Kylo, South Superior.....	Standard.
Sept. 27	Tincture of iodine.....	Ed. Williams, Madison.....	Standard.
Sept. 27	Spirit of camphor.....	Ed. Williams, Madison.....	Below standard in camphor.
Sept. 27	Spirit of camphor.....	J. E. Kylo, South Superior.....	Standard.
Oct. 22	Liquor potassium arsenite.....	Jas. A. Meller Drug Co., Boscobel.....	Below standard in potassium iodide.
Nov. 1	Tincture of iodine.....	Citizens Drug Store, Mosinee.....	Standard.
Nov. 14	Tincture of iodine.....	J. L. Holm, Corliss.....	Below standard in iodine and potassium iodide.
Nov. 14	Tincture of iodine.....	J. L. Holm, Corliss.....	Standard.
Nov. 27	Tincture of iodine.....	J. L. Holm, Corliss.....	Standard.
Nov. 27	Tincture of iodine.....	J. L. Holm, Corliss.....	Standard.
Dec. 7	Tincture of iodine.....	Milwaukee Drug Co., Milwaukee.....	Standard.
1917			
Jan. 9	Tincture of iodine.....	J. L. Holm, Corliss.....	Below standard in iodine and potassium iodide.
Jan. 9	Tincture of iodine.....	J. L. Holm, Corliss.....	Standard.
April 21	Gum camphor	H. H. Hackbarth, Mosinee.....	Standard.
April 23	Liquor potassium arsenite.....	J. A. Meller Drug Co., Boscobel.....	Standard.
April 27	Alcohol	Webster Drug Co., Webster.....	Contained 88.4% of alcohol by volume.
June 18	Tincture of iodine.....	Citizens Drug Store, Mosinee.....	Standard.
June 29	Tincture of iodine.....	Dr. H. D. Hill, Grand Marsh.....	Below standard in iodine and potassium iodide.

FISH AND OYSTERS.

Date	Bought for	Labeled	Bought of	Remarks
1916 Nov. 21	Navy Rock fish	1 lb. Navy Rock Boneless Fish 4/10 of 1% Boracic Acid.	M. Kazlukewicz, Ashland.....	Boric acid was removed after three six-hour periods of maceration and washing which is a more complete treatment than cod fish would be subjected to in preparation for cooking.
Nov. 29	Oysters .....	.....	Buehler Bros., Fond du Lac.....	Contained 41.5% of free liquor, an excessive amount.
Dec. 12	Oysters .....	.....	New York Market Co., Kenosha....	Contained 38.22% of free liquor, an excessive amount.
Dec. 12	Oysters .....	.....	New York Market Co., Kenosha....	Passed.
Dec. 19	Oysters	Trupakt Oysters 1/10 gal. solid meat.	A. G. Reuter, Madison.....	Misbranded. 9% short measure.
1917 Feb. 10	Oysters .....	.....	The New Meat Market, Wausau....	Contained 46.19% of free liquor, an excessive amount.
June 8	Boneless Codfish.....	One Pound Net Magnet Brand Boneless Codfish.	H. Kum, Oashton.....	Misbranded, 25% short weight.

FLAVORS AND FLAVORING EXTRACTS.

Lemon Extract—Standard.

Date	Purchased of	Manufacturer or Jobber
1916		
Aug. 25	Ratzlaff Bros., Edgerton.....	E. B. Millar & Co., Chicago.
Nov. 1	A. Marachowsky, Mauston.....	Eddy & Eddy Mfg. Co., St. Louis.
Dec. 5	Boston Store, Cumberland.....	Griggs, Cooper & Co., St. Paul.
Dec. 5	J. N. Wagner, Black Creek.....	Gerhard Extract Co., Oconto Falls.
Dec. 14	Fred A. Ebberts, Burlington.....	A. J. Hilbert & Co., Milwaukee.
1917		
Feb. 12	John Carrier, Rice Lake.....	The J. P. Dieter Co., Chicago.
Feb. 15	A. Puerner & Son, Jefferson.....	Northwestern Flavoring Extract Co., Sterling, Ill.
Feb. 16	S. E. Waterbury, Jefferson.....	Standard Mfg. Co., Decatur, Ill.
Mar. 6	Chas. Fresse, Ellsworth.....	Jewett & Sherman, Milwaukee.
Mar. 7	Jackson & Jackson, Delavan.....	
Mar. 27	P. Richter, Bangor.....	Arthur S. Holden, Winona.
May 23	Carl B. Fortney, Viroqua, R. D..	Arbuckle Bros., Chicago.
May 29	James Birmingham, Wolf Creek..	Griggs, Cooper & Co., St. Paul.

FLAVORS AND FLAVORING EXTRACTS—Continued.
Lemon Extract—Not Standard or Misbranded.

Date	Labeled	Purchased of	Manufacturer or Jobber	Remarks
1915 Feb. 26	Compound of Terpeneless Lemon and Citral 3½ oz.	Bush & Tavs, Brandon.....	Arbuckle Bros., Chicago.....	Not standard. Contains no oil of lemon. Misbranded. Six per cent short measure.
1916 July 13	XXXX Lemon Flavor.....	Paul E. Sauer Co., Slades Corners.	.....	Not standard. Contains no oil of lemon.
July 25	Foster's Delicious Lemon Flavoring.	Leo Banditt, Abbottsford.....	Foster Bros. & Co., Eau Claire...	Not standard. Contains no oil of lemon. Misbranded in that contents were not stated.
Aug. 3	Terpeneless Half Standard Lemon Extract.	Chas. Fresse, Ellsworth.....	Seabury Co., St. Paul.....	Not standard. Contains no oil of lemon.
Aug. 7	Pure Superfine Triple Strength Lemon Flavor Italian Oil of Lemon and Citral.	Stetsonville Cooperative Mercantile & Shipping Assn., Stetsonville.	The Rolander Remedy Co., St. Paul	Not standard. Contains no oil of lemon. Misbranded in that it was not triple strength.
Dec. 5	Half Standard Strength Terpeneless Lemon Ex- tract.	Boston Store, Cumberland.....	Griggs, Cooper & Co., St. Paul....	Not standard. Contains no oil of lemon.
1917 Feb. 8	Pure Lemon Extract.....	P. W. Jorgensen, Green Bay.....	Mrs. C. Helgesen, Green Bay.....	Not standard. Contains only a trace of lemon oil.
Feb. 13	Pure Flavoring Extract of Lemon.	A. J. Fries, Packwaukee.....	Dahlman & Inbush Grocery Co., Milwaukee.	Misbranded in that contents were not stated.
Mar. 15	Lemon Extract 3 oz.....	J. A. Abbott, Springfield.....	L. Ferrigo Co., Allegan, Mich.....	Below standard in lemon oil. Misbranded
May 21	Lemon Extract	Larson & Carlson, Grantsburg....	The E. Howard Smith Co., Winona, Minn.	Short measure. Misbranded in that contents were not stated.
May 22	Extract of Lemon.....	The Department Co., Stoughton...	Pugh Stores Co., Chicago.....	Misbranded. 5% short measure.

Vanilla Extract—Standard.

Date	Bought of	Manufacturer or Jobber
1916		
April 15	F. Arens, Chilton.....	Sherer-Gillett Co., Chicago.
Nov. 1	A. Marachowsky, Mauston.....	Eddy & Eddy Mfg. Co., St. Louis.
1917		
Jan. 30	L. G. Isabella, Spooner.....	Sherer-Gillett Co., Chicago.
Feb. 13	A. J. Fries, Packwaukee.....	E. R. Pahl & Co., Milwaukee.
Mar. 7	Jackson & Jackson, Delavan.....	H. P. Coffee Co., St. Louis.
Mar. 30	F. Bonri & Son, Fountain City.....	
April 3	Holcombe Mercantile Co., Centuria.....	
April 17	Ole Bergseng, New Richmond.....	The C. F. Sauer Co., Richmond, Va.
June 7	The T. J. McCollon Co., East Elsworth.....	The Northern Jobbing Co., Chicago.

FLAVORS AND FLAVORING EXTRACTS—Concluded.

Vanilla Extract—Not Standard or Misbranded.

Date	Labeled	Bought of	Manufacturer or Jobber	Remarks
1915 Mar. 2	Compound Extract of Vanilla, Vanilla, and Coumarin.	W. R. Deakin, Portage.....	A. E. Allen, Portage.....	Not standard. Not a vanilla extract. Large amount of coumarin present.
1916 Aug. 8	Jenning's Flavoring Extract Mexican Vanilla 3 oz.	Oarvanev & Deesh, Whitewater.....	Jenning's Flavoring Extract Co., Grand Rapids, Mich.	Misbranded Short measure.
1917 Feb. 8	Pure Vanilla Extract.....	P. W. Jorgensen, Green Bay.....	Mrs. C. Helgesen, Green Bay.....	Not standard. Not vanilla extract. Large amount of coumarin present.
April 11	Vanillin flavor. Delicious compound. Manufactured from Vanillin, Coumarin and Caramel.	P. H. Lamo, Luck.....	Wm. McMurray & Co., St. Paul..	Not standard. Not a vanilla extract.
May 9	Vanilla and Tonka Flavor. Three-eighths standard strength 3% to 4 oz. net.	B. A. Pleser, Turtle Lake.....	Green-DeLaittre Co., Minneapolis.	Not standard. Contains coumarin. Misbranded in that contents were not correctly stated.
May 21	Vanilla Flavor. Contains Vanillin and Coumarin.	Larson & Carlson, Grantsburg....	The E. Howard Smith Co., Winona, Minn.	Not standard. Not a vanilla extract. Misbranded in that contents were not stated.

Miscellaneous Flavoring Extracts.

Date	Bought for	Labeled	Bought of	Remarks
1916 Aug. 22	Essence of peppermint....	Essence of Peppermint. Contains 62 1/4% alcohol.	D. H. McElmurry, Stanley.....	Standard.
Aug. 31	Commercial peppermint ...	Commercial Peppermint	Gieseler's Pharmacy, Racine.....	Not standard. Below in oil of peppermint.
1917 Mar. 6	Essence of peppermint.....	Essence of Peppermint.....	R. S. Young, Darlen.....	Standard.
Mar. 7	Essence of peppermint.....	Essence of Peppermint.....	H. C. Rutad, Delavan.....	Standard.
Mar. 22	Essence of peppermint.....	Essence of Peppermint, 85.5 alcohol.....	Aug. J. C. Benn, Medford.....	Standard.
Mar. 23	Essence of peppermint.....	Essence of Peppermint. Alcohol 85.5%.....	Suits Bros., Medford.....	Standard.
Mar. 30	Essence of peppermint.....	Essence of Peppermint. Alcohol 85.5%.....	Reinhardt & Frigina, Fountain City.....	Standard.
Mar. 31	Extract of pineapple.....	Artificial Extract of Pineapple.....	Chas. Kaste, Alma.....	Artificial extract not so sold.
April 11	Essence of peppermint.....	Essence of Peppermint.....	W. W. Lundberg, Glenwood City..	Standard.
April 17	Orange flavoring	Flavoring Extract Natural Orange 95% alcohol.	Ole Bergseng, New Richmond.....	Standard.
April 17	Orange flavoring	Orange Flavor	Ole Bergseng, New Richmond.....	Not standard. Contains no oil of orange.

FLOUR.

Date	Bought or Submitted for	Bought of or Submitted by	Remarks
1916			
Oct. 2	Wheat flour	Henry Belder, Marshfield.....	Misbranded in that the name and address of the manufacturer, packer or dealer were not stated. Tested for artificial bleaching. No evidence found.
Oct. 2	Wheat flour	Tiffault-Kamps Mercantile Co., Marshfield.....	Misbranded in that the name and address of the manufacturer, packer or dealer were not stated. Found to be bleached with nitrates.
Oct. 2	Wheat flour	Kestel Bros. Co., Marshfield.....	Misbranded in that the name and address of the manufacturer, packer or dealer were not stated. Found to be bleached with nitrates.
Nov. 10	Buckwheat flour	*Farmers Mutual Trading Co., Fairchild.	Standard.
1917			
Jan. 23	Buckwheat flour	*L. R. Earnshaw, Lake Beulah.....	Standard.
Jan. 23	Buckwheat flour	*Burlington Feed Co., Burlington.....	Not standard. Contains 15% foreign starch, either wheat or rye.
Feb. 15	Buckwheat flour	*Stillman Wright Co., Berlin.....	Standard.
Feb. 16	Buckwheat flour	J. M. Bientang, Jefferson.....	Not standard. Contains foreign starch showing either wheat or rye flour.
Feb. 23	Buckwheat flour	Blodgett Milling Co., Janesville.....	Standard.
Feb. 23	Buckwheat flour	Skelly Grocery Co., Janesville.....	Standard.
Mar. 8	Rye flour compound.....	Schneider Bros. & Mader, Winneconne.	Mixture of wheat and rye poorly milled.

* Submitted by.

FOOD PRESERVATIVES.

Date	Labeled	Purchased of	Manufacturer or Jobber	Remarks
1916				
July 7	Freeze-Em-Pickle	L. E. Koehler, Weyerhaeuser.....	B. Heller & Co., Chicago.....	No adulteration found.
July 14	Mrs. Price's Canning Compound..	H. Horn, Loyal.....	Mrs. W. T. Price, Minneapolis.....	Composed essentially of borie acid.
July 26	Mrs. Price's Canning Compound..	E. F. Swanson, Minong.....	Mrs. W. T. Price, Minneapolis.....	Composed essentially of borie acid.
July 26	Mrs. Price's Canning Compound..	Frank B. Wing, Abbotsford.....	The Price Compound Co., Minneapolis.	Composed essentially of borie acid.
July 27	Mrs. Price's Canning Compound..	E. F. Swanson, Minong	The Price Compound Co., Minneapolis.	Composed essentially of borie acid.

Aug. 1	Mrs. Price's Canning Compound..	Miller & Mattausch, Cream.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Aug. 8	Fuhrman's Ever-Keep Canning Compound Tablets.	C. A. Love, Luck.....	C. A. Fuhrman, Lawton, Mich.....	Composed essentially of boric acid.
Aug. 8	Mrs. Price's Canning Compound..	H. J. O'Connor, Whitewater.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Aug. 10	Salicyl Acid—Poison	L. A. Duffin & Co., Whitewater.....	The Price Compound Co., Minneapolis.	Contained 98.9% of salicylic acid.
Aug. 11	Mrs. Price's Canning Compound..	H. A. Dierfeld & Son, Whitewater.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Aug. 21	Mrs. Price's Canning Compound..	Mooney's Pharmacy, Ladysmith.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Aug. 21	Mrs. Price's Canning Compound..	A. T. McGeorge, Cameron.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Aug. 25	Mrs. Price's Canning Compound..	L. W. Fairfield, Sullivan.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Aug. 30	Mrs. Price's Canning Compound..	A. E. Olle, Kenosha.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Aug. 31	Mrs. Price's Specially Prepared Boric Acid.	Kradwell Drug Co., Kenosha.....	Mrs. W. T. Price, Minneapolis.....	Boric acid with a small percentage of sodium chloride.
Aug. 31	Mrs. Price's Specially Prepared Boric Acid.	Kradwell Drug Co., Kenosha.....	Mrs. W. T. Price, Minneapolis.....	Boric acid with a small percentage of sodium chloride.
Sept. 1	Imperial Brand Canning Compound.	Russell's Drug Store, Racine.....	Yahr & Lange Drug Co., Milwaukee.	Composed essentially of boric acid.
Sept. 5	Imperial Brand Canning Compound	Frank Mueller, Princeton.....	Yahr & Lange Drug Co., Milwaukee.	Composed essentially of boric acid.
Sept. 14	Mrs. Price's Canning Compound..	Ella D. Kruger, Prentice.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Sept. 18	Cider Preservative	W. H. Hammersley, Lake Geneva.....	The Price Compound Co., Minneapolis.	Found to be salicylic acid.
Sept. 19	Mrs. Price's Canning Compound..	Volgt's Drug Store, Appleton.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Sept. 19	Mrs. Price's Canning Compound..	Roemer & Belling, Appleton.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Sept. 19	Mrs. Price's Canning Compound..	F. G. Walker, Appleton.....	The Price Compound Co., Minneapolis.	Boric acid with a small percentage of sodium chloride.
Sept. 25	Mrs. Price's Canning Compound..	North End Drug Co., Manitowoc.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Sept. 26	Mrs. Price's Canning Compound..	O. A. Schraut, Sheboygan.....	The Price Compound Co., Minneapolis.	Boric acid with a small percentage of sodium chloride.
Sept. 27	Imperial Brand Canning Compound.	C. E. Hoffman, Port Washington.....	Yahr & Lange Drug Co., Milwaukee.	Composed of boric and boric acid.
Oct. 4	Mrs. Price's Canning Compound..	Elver's Pharmacy, Neenah.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.
Oct. 4	Mrs. Price's Special Prepared Boric Acid.	Marsh Bros., Neenah.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.

FOOD PRESERVATIVES.—Continued.

Date	Labeled	Purchased of	Manufacturer or Jobber	Remarks
Oct. 4	Mrs. Price's Compound.....	Schultz Bros., Neenah.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 4	Mrs. Price's Compound.....	M E. Barnett & Co., Neenah.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 6	Mrs. Price's Compound.....	C. E. Brown, Walworth.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 6	Mrs. Price's Compound.....	E. J. Booth, Walworth.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 16	Mrs. Price's Canning Compound..	H. L. Partridge & Co., La Crosse.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 16	Mrs. Price's Canning Compound..	Julie's Pharmacy, La Crosse.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 16	Mrs. Price's Canning Compound..	A. Bellevue, La Crosse.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 16	Mrs. Price's Canning Compound..	C. L. Lien, La Crosse.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 16	Mrs. Price's Compound.....	Hebbard & Co., La Crosse.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 24	Mrs. Price's Canning Compound..	White Cross Drug Co., Oshkosh.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 26	Mrs. Price's Special Prepared Boric Acid.	S. M. Rednary, Burlington.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 26	Mrs. Price's Compound.....	Burlington Drug Co., Burlington..	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 26	Mrs. Price's Compound.....	E. T. Tobin, Burlington.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Oct. 30	Mrs. Price's Compound.....	Becker's Pharmacy, Omro.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Nov. 1	Mrs. Price's Compound.....	F. W. Diedrich, Ripon.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Dec. 5	Imperial Brand Canning Compound.	F. V. Masilko, Fond du Lac.....	Yahr & Lange Drug Co., Milwaukee.	Found to be boric acid.
1917 Jan. 19	Mrs. Price's Canning Compound..	O. A. Nelson, Amherst Junction.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.

Jan. 22	Mrs. Price's Canning Compound..	Manley Bros., Bancroft.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Jan. 23	Mrs. Price's Canning Compound..	J. W. Bovee, Plainfield, R. 1.....	The Price Compound Co., Minneapolis.	Boric acid with small percentage of sodium chloride.
Jan. 29	Canning Compound	Geo. W. Pradel, Wausau.....	.....	Boric acid with small percentage of sodium chloride.
June 12	Mrs. Price's Canning Compound..	L. Rosenhelmer, Kewaskum.....	The Price Compound Co., Minneapolis.	Composed essentially of boric acid.

LINSEED OILS.

Linseed Oil—Standard.

Date	Bought for	Purchased of	Manufacturer or Jobber
1916			
July 19	Boiled linseed oil.....	A. Ritger, Marathon.....	Minneapolis Linseed Oil & Paint Co., Minneapolis.
July 26	Boiled linseed oil.....	Stroota Hardware Co., Abbotsford.....	St. Paul White Lead & Oil Co., St. Paul.
July 26	Boiled linseed oil.....	Fred L. Parish, Abbotsford.....	Minneapolis Linseed Oil & Paint Co., Minneapolis.
July 26	Raw linseed oil.....	Fred L. Parish, Abbotsford.....	Chicago White Lead & Oil Co., Chicago.
July 26	Boiled linseed oil.....	Abbotsford Cooperative Merc. Co., Abbotsford.	American Linseed Co., St. Paul.
Aug. 1	Boiled linseed oil.....	Denison & Coerper, Mosinee, R. 1.....	Merchant's Syndicate, Chicago.
Aug. 4	Raw linseed oil.....	Haesley & Schmitt, East Ellsworth.....	Humiston, Keeling Co., Chicago.
Aug. 9	Boiled linseed oil.....	W. E. Janssen, Underhill.....	Great Eastern Refining & Paint Co., Omaha, Neb.
Aug. 9	Raw linseed oil.....	Sharon Pharmacy, Sharon.....	Manhattan Oil Co., St. Paul.
Aug. 9	Boiled linseed oil.....	Foster Mercantile Co., Salem.....	Morley & Murphy, Green Bay.
Sept. 26	Boiled linseed oil.....	M. Anthonson, Pleasant Prairie.....	Eastland Linseed Co., Cleveland, O.
Sept. 27	Boiled linseed oil.....	M. Anthonson, Pleasant Prairie.....	E. Garnish & Sons Hdw. Co., Ashland.
Sept. 27	Raw linseed oil.....	J. W. Rika, Kewaunee, R. 3.....	
Oct. 4	Raw linseed oil.....	M. A. Southwick, Williams Bay.....	
Oct. 20	Raw linseed oil.....	F. H. Drummond, Cable.....	
Nov. 8	Raw linseed oil.....	W. A. Parent, Cable.....	
Nov. 8	Boiled linseed oil.....	F. H. Drummond, Cable.....	
Nov. 8	Boiled linseed oil.....	North Side Bargain Store, Kenosha.....	
Dec. 12	Boiled linseed oil.....		

LINSEED OILS—Continued.

Linseed Oil—Standard—Continued

Date	Bought for	Purchased of	Manufacturer or Jobber
1917			
Jan. 24	Raw linseed oil.....	D. A. Hetzel, Almond.....	Minneapolis Drug Co., Minneapolis.
Mar. 16	Boiled linseed oil.....	Columbus Hardware Co., Columbus.....	Northern Linseed Oil Co., Minneapolis
Mar. 16	Raw linseed oil.....	Gulnn Bros., Hannibal.....	Winona Oil Co., Winona, Minn.
April 6	Linseed oil.....	G. A. Sinkula, Armstrong Creek.....	
May 23	Boiled linseed oil.....	Carl B. Fortney, Viroqua, R. D.....	
June 18	Linseed oil.....	Stowe Mercantile Co., South Byron.....	
June 21	Boiled linseed oil.....	Port Wing Hardware Co., Port Wing.....	Inland White Lead Co., Chicago.

Found to Contain Unsaponifiable Material—Either a Mineral Oil Product or Rosin Oil or a Mixture of Both.

Date	Bought for	Purchased of	Manufacturer or Jobber	Per cent unsaponifiable material
1916				
July 3	Boiled linseed oil.....	Nic Mahlenberg, New Holstein.....	Hoyt & Company, Chicago.....	14.51
July 31	Raw linseed oil.....	L. B. Lefley, Pepin.....	American Turpentine Co., Cleveland.....	33.70
Aug. 2	Boiled linseed oil.....	Kopplin & Kopplin, Iron River.....	Ohio State Linseed Co., Cleveland.....	5.41
Aug. 3	Raw linseed oil.....	F. H. Keplinger, Centuria, R. 2.....		10.78
Aug. 8	Boiled linseed oil.....	J. W. Rika, Kewaunee.....	Ohio State Linseed Co., Cleveland.....	42.13
Aug. 30	Boiled linseed oil.....	Aug. Walters, Lindsey.....	Ohio State Oil Co., Cleveland.....	34.46
Aug. 31	Boiled linseed oil.....	North Side Bargain Store, Kenosha.....	Central Linseed Oil Co., Cleveland.....	57.8
Sept. 1	Boiled linseed oil.....	Stallman Bros., Corinth.....	Jenkins Oil Co., Chicago.....	22.68
Sept. 12	Boiled linseed oil.....	C. J. Nelson, Racine.....	Ohio State Linseed Oil Co., Cleveland.....	36.55
Sept. 22	Boiled linseed oil.....	Dvorak & Huinker, Cato.....	Northwestern Oil Co., Superior.....	2.79
Oct. 4	Raw linseed oil.....	Kiel Mercantile Co., Kiel.....	Ohio State Linseed Oil Co., Cleveland.....	36.76
Oct. 23	Raw linseed oil.....	C. R. Sorenson Co., Brantwood.....	Ohio State Linseed Co., Cleveland.....	8.61

Oct. 23	Boiled linseed oil.....	Kiel Mercantile Co., Kiel.....	Ohio State Linseed Co., Cleveland.....	18.88
Nov. 15	Raw linseed oil.....	J. G. Zimmerman & Sons Co., Nellsville.....	Ohio State Linseed Oil Co., Cleveland.....	32.67
1917				
Jan. 5	Boiled linseed oil.....	Kiel Mercantile Co., Kiel.....	.....	25.62
Jan. 24	Boiled linseed oil.....	J. C. Fletcher & Co., Almond.....	.....	6.91
Feb. 3	Raw linseed oil.....	Jos. P. Francols, Green Bay.....	Southern States Turpentine Co., Cleveland.....	30.51
Feb. 26	Boiled linseed oil.....	J. Maniberg, Chilton, E. 5.....	Holland Coal & Oil Co., Chicago.....	11.35
Feb. 27	Raw linseed oil.....	Jos. P. Francols, Green Bay.....	Southern States Turpentine Co., Cleveland.....	29.40
May 16	Boiled linseed oil.....	Alfred Swerstrom, Luck.....	Ohio State Linseed Co., Cleveland.....	42.18
May 17	Raw linseed oil.....	Frigina Bros., Fertig Co., Arcadia.....	Southern States Turpentine Co., Cleveland.....	30.20
May 17	Boiled linseed oil.....	Frigina Bros., Fertig Co., Arcadia.....	Southern States Turpentine Co., Cleveland.....	26.29
May 25	Boiled linseed oil.....	Stowe Mercantile Co., South Byron.....	Ohio State Linseed Co., Cleveland.....	42.84
June 1	Boiled linseed oil.....	E. W. Keplinger, Centuria.....	.....	37.29
June 12	Raw linseed oil.....	The Fair, Waupaca.....	Ohio State Oil Co., Cleveland.....	40.67
June 19	Boiled linseed oil.....	Kopplin & Kopplin, Iron River.....	Ohio State Linseed Co., Cleveland.....	45.96

Linseed Oils—Submitted Samples.

Date	Submitted by	Remarks
1916		
July 1	Jacobson & Swenson, Nelsonville.....	Standard.
July 1	Jacobson & Swenson, Nelsonville.....	Standard.
July 25	W. D. Roberts, Albany.....	Standard.
July 28	Joseph Wickham, Walworth.....	Standard.
Aug. 22	Selvert Fosmark, Morrisville.....	Standard.
Aug. 22	University painter.....	Standard.
Aug. 22	University painter.....	Standard.
Oct. 10	C. J. Nelson, Racine.....	Not standard.
Oct. 17	Geo. C. Zoch, Wales.....	Not standard. Contains 25.59% of unsaponifiable material.
Oct. 1	University painter.....	Standard.
Dec. 13	Jackson Hardware Co., Menomonee.....	Standard.
Dec. 14	Mrs. F. E. Bell, Camp Douglas.....	Not standard. Contains a small percentage of mineral oil.

LINSEED OILS—Continued.

Linseed Oils—Submitted Samples—Continued

Date	Submitted by	Remarks
1917		
Jan. 15	W. N. Fitzgerald, Board of Public Affairs.....	Standard.
Jan. 15	W. N. Fitzgerald, Board of Public Affairs.....	Contains 34.79% of unsaponifiable material.
Jan. 15	W. N. Fitzgerald, Board of Public Affairs.....	Standard.
Jan. 15	W. N. Fitzgerald, Board of Public Affairs.....	Contains 42.40% of unsaponifiable material.
Jan. 15	W. N. Fitzgerald, Board of Public Affairs.....	Contains 38.25% of unsaponifiable material.
Jan. 20	W. N. Fitzgerald, Board of Public Affairs.....	Standard.
Jan. 20	W. N. Fitzgerald, Board of Public Affairs.....	Standard.
Jan. 20	W. N. Fitzgerald, Board of Public Affairs.....	Contains 21.56% of unsaponifiable material.
Jan. 24	Board of Control, Madison.....	Contains 36.07% of unsaponifiable material.
Jan. 24	Board of Control, Madison.....	Contains 36.32% of unsaponifiable material.
Jan. 24	Board of Control, Madison.....	Not standard.
Jan. 24	Board of Control, Madison.....	Contains 21.74% of unsaponifiable material.
Jan. 24	Board of Control, Madison.....	Contains 23.86% of unsaponifiable material.
Jan. 24	Board of Control, Madison.....	Contains 35.45% of unsaponifiable material.
Jan. 24	Board of Control, Madison.....	Contains 40.10% of unsaponifiable material.
Jan. 24	Board of Control, Madison.....	Not standard.
Jan. 24	Board of Control, Madison.....	Standard.
Jan. 24	Board of Control, Madison.....	Standard.
Jan. 25	W. N. Fitzgerald, Board of Public Affairs.....	Standard.
Jan. 25	W. N. Fitzgerald, Board of Public Affairs.....	Not standard.
Jan. 25	W. N. Fitzgerald, Board of Public Affairs.....	Contains 28.50% of unsaponifiable material.
Feb. 10	W. N. Fitzgerald, Board of Public Affairs.....	Contains 20.94% of unsaponifiable material.
Feb. 15	Board of Control, Madison.....	Standard.
Mar. 6	Gov. E. L. Philipp, Madison.....	Not standard.
Mar. 17	Board of Control, Madison.....	Adulterated with mineral oil and rosin oil.
Mar. 17	Board of Control, Madison.....	Contains excessive foots.
Mar. 17	Board of Control, Madison.....	Standard.
Mar. 17	Board of Control, Madison.....	Contains 39.37% of unsaponifiable material.
Mar. 17	Board of Control, Madison.....	Contains 32.05% of unsaponifiable material.
April 5	The Heppie Cash Store, Hartford.....	Not standard.
May 20	Fred Kroger Hardware Co., La Crosse.....	Contains 31.01% of unsaponifiable material.
May 20	O. A. Rosa, Evansville.....	Contains 22.44% of unsaponifiable material.
May 20	Mr. Schardel, Madison.....	Standard.
May 20	C. A. Rosa, Evansville.....	Standard.
June 11	Willis Elling, Evansville.....	Standard.

MEAT PRODUCTS.

Sausage and Sausage Meats.

Tested for Chemical Preservatives and Cereals—None Found.

Date	Bought of	Date	Bought of	Date	Bought of	Date	Bought of
1916		1917					
Aug. 2	B. Hiller, Hudson.	Jan. 28	Jos. Fellrath, Fond du Lac.	Mar. 10	Cudahy Cash Market, Madison.	May 2	Roberts & Alexander, Elroy.
Aug. 30	Louis Larson Estate, Kenosha.	Mar. 10	Stehr & Walter, Madison.	Mar. 10	Buehler Bros., Madison.	June 15	Heldt & Kortendick, West Bend.
Nov. 29	Buehler Bros., Fond du Lac.	Mar. 10	Hartmeyer & Braun, Madison.	Mar. 15	Wm. Rosch, Lake Geneva.		
1917		Mar. 10	Scheler Bros., Madison.	April 20	H. C. Bartels, Oshkosh.		
Jan. 19	Wm. H. Nott, Jr., Lake Geneva.						

Sausage and Sausage Meat—Found to Contain Sulphites, a Chemical Preservative.

Date	Bought for	Bought of	Date	Bought for	Bought of
1916 Aug. 24	Hamburger	Wells & Garvin, Ashland.	1917 Feb. 6	Chopped meat and meat trimmings.	Conrad Christensen, Green Bay.
Sept. 1	Hamburger	Albertson & Larsen, Racine.	Feb. 7	Chopped meat and meat trimmings.	The Van Dyck Co., Green Bay.
Oct. 20	Homemade sausage	A. Timm, Genoa Junction.	April 23	Hamburger	Chas. Luetzow, Wauwatosa.

Meat Products—Concluded.

Sausage and Sausage with Cereal.

Date	Bought for	Bought of	Remarks
1916 Aug. 2	Sausage with cereal.....	Peoples Meat Market, Nekoosa.....	Standard.
1917 Mar. 8	Bologna	E. C. Buhler, Elkhorn.....	Contains 5.72% of starch. Standard. Contains 6.17% of starch.
Mar. 10	Pork sausage	Madison Packing Co., Madison.....	
Mar. 10	Pork sausage	A. G. Reuter, Madison.....	

MISCELLANEOUS FOODS.

Date	Bought or Submitted for	Labeled	Bought of or Submitted by	Remarks
1915 Set. 28	Meat treat.....	Frank's French Meat Treat. Net Weight 5 ounces.	Schlesmann Bros., Racine.....	Tested for boric acid and other soluble preservatives. None found.
1916 Jan. 25	Whey cheese.....	Whey Cheese	McGavock Grocery Co., Beloit.....	Found to contain 21.80% of moisture and 3.06% fat.
Mar. 21	Allspice	Superior Allspice	Jos. Hallada, Luxemburg.....	Passed.
June 27	Baking powder	Col. Gildea's Baking Powder.....	Knudt Espeseth, Dallas.....	Misbranded in that net contents were not plainly stated.
June 30	Horse radish	Horse Radish	Pure Food Store, Shawano.....	Sample was found to be old and the active principle had disappeared.
July 3	Imitation vanilla flavor...	Mitchell Imitation Vanilla Flavor...	F. G. Schmidt, Burnett.....	A compound of vanillin and coumarin colored with caramel. Not properly labeled.

Aug. 11	Imitation vanilla and conca.	Imitation Vanilla and Tonce.	N. J. Greisch, Antigo.....	A compound of vanillin and coumarin col- ored with caramel. Not properly labeled.
Aug. 25	Ginger	Sugar Color. Electric Mills Topmost Ginger guaranteed absolutely pure.	Patzlaff Bros., Edgerton.....	Misbranded. Net contents not stated.
Aug. 25	Black pepper	Pure Black Pepper, 5c size.....	Ratzlaff Bros., Edgerton.....	Misbranded. Net contents not stated.
Aug. 25	Pickling spice	Pickling Spice	Ratzlaff Bros., Edgerton.....	Misbranded. Net contents not stated.
Oct. 30	Mazola	Mazola. A salad oil. A product from corn.	Sullivan & Oak-oon, Omro.....	No adulteration found.
Nov. 24	Olive oil	Arbuckles Aroma Coffee.....	Dr. I. P. Harkins, Hilbert.....	No adulteration found.
Dec. 4	Coffee	Sherman's Vintage Brand Coffee.....	Miller-Waterman Co., Cumberland M. L. Nelson, Madison	Standard. Standard.
Dec. 11	Ground coffee			
1917				
Jan. 31	Oleomargarine	Oleomargarine	A. A. Kuehn, Cambria.....	Held to be in semblance of yellow butter.
Feb. 13	Evaporated milk	Evaporated Milk Contents 1 lb.....	N. W. Crosley, Milton.....	Standard.
Mar. 15	Van-ilo extract	Van-ilo A Compound for flavor ing 3 oz.	J. A. Abbott, Springfield.....	Passed.
Mar. 30	Compound of vanilla	Iowa and Wisconsin Special Com- pound Flavor Vanilla 25% Vanil- lin and Coumarin.	Paul Ruediger, Fountain City.....	Misbranded. Net contents not stated.
April 7	Preservative		Hugo Neu, Menomonee Falls.....	Found to be a sulphite.
May 17	Sockeye Salmon	Alaska Sockeye Red Salmon net weight one pound	Carl W. Peterson, Frederic.....	No adulteration found and was properly labeled.
May 23	Vanelda	Vanelda	O. B. Fortney, Viroqua.....	Misbranded. Net contents not stated.
June 8	Ice		J. B. Kelly, Mauston.....	No adulteration found.
June 12	Ice cream		American Ice Cream Co., Madison.	Contained 18% fat.
June 23	Ice cream		F. F. Haeske, Meat and Milk In- spector, Superior.	Contained 7.75% fat.

* Submitted by.

OLEOMARGARINE AND LARD.

Date	Bought for	Bought of	Manufacturer or Jobber	Remarks
1916 Nov. 10	Oleomargarine	H. Rivkin Estate, Hayward.....	Wisconsin Butterine Co., Milwaukee	Held not to be in imitation of yellow butter.
1917 Jan. 4	Lard	Jones Bros., Clear Lake.....	.....	Not standard. Contains beef fat.
Jan. 12	Oleomargarine	W. P. Weisbrod, Amherst.....	.....	Held not to be in imitation of yellow butter.
Jan. 18	Oleomargarine	C. D. Gilbert, Lake Geneva.....	Armour & Company, Chicago.....	Held to be in semblance of yellow butter.
Jan. 19	Oleomargarine	J. J. Hahn, Lake Geneva.....	Swift & Co., Chicago.....	Held to be in semblance of yellow butter.
Jan. 19	Oleomargarine	Louis H. Voelz, Lake Geneva.....	Armour & Company, Chicago.....	Held not to be in semblance of yellow butter.
Feb. 23	Lard	Stupp's Cash Market, Janesville..	.....	Not standard. Contains beef fat. Misbranded in that net weight was not stated.

PICKLES.

Date	Bought for	Labeled	Bought of	Remarks
1916 Mar. 31	Sweet pickles	Sweet Pickles, 8 oz. Prepared with a small amount of alum and 1/10 of 1% benzoate of soda.	Dillon Donahoo, Cuba City.....	Not standard. Contains benzoic acid.
Mar. 31	Sweet pickles	Sweet Pickles, 8 oz. Prepared with a small amount of alum and 1/10 of 1% sodium benzoate.	Longbotham & Gibson, Cuba City	Not standard. Contains benzoic acid.
Mar. 31	Sweet pickles	Sweet Pickles, Prepared with Aluminum sulphate, turmeric and 1/10 of 1% benzoate of soda.	Dillon Donahoo, Cuba City.....	Not standard. Contains alum and not so stated on the label. Contains benzoic acid.
April 4	Sour pickles	Sour Pickles	C. O. Tellefson & Son, Utica.....	Misbranded in that net contents were not stated.

May 9	Sweet pickles	Sweet Pickles, 1/10 of 1% benzoate of soda. 8 oz. liquid.	Harvey Martin, Soldiers Groves....	Not standard. Contains alum and not so stated on the label. Contains benzoic acid.
June 16	Sweet pickles	Standard Quality. Net weight 1 lb. 2 oz.	Jacobson Mercantile Co., Rice Lake	Misbranded in that the name and address of the manufacturer, packer or dealer were not stated on the label.
Sept. 14	Military pickle	The Military Pickle manufactured from Choice Oriental Fruits and the best Eng- lish Vegetables. Turnerie used in the preparation of this article.	Howe Bros., Stoughton.....	Misbranded in that the net contents and the name and address of the manufac- turer, packer or dealer were not stated on the label.
1917 Jan. 10	Sweet gherkins	Finest Sweet Gherkins.....	Roberts & Alexander, Elroy.....	Not standard. Contains alum and not so stated on the label.

SACCHARINE PRODUCTS.

Honey.

Date	Bought of or Submitted by	Remarks	Date	Bought of or Submitted by	Remarks
1916 April 18	J. J. Le Capitaine & Son, Green Bay	Standard.	1917 Jan. 3	H. A. Schulze & Son, Clear Lake.	Misbranded in that the net contents were not stated.
May 1	Frank Hannemann, Wausau	Standard.	Jan. 10	*A. F. Fessler, Madison	No adulteration found.
May 2	John Haesele, Wausau.....	Standard.	Feb. 20	*Mrs. John Hersig, Mt. Horeb.	No adulteration found.
Aug. 8	G. W. Montgomery, Dresser Junction.	Misbranded in that the net contents were not stated.	Mar. 9	*D. Schrauth, Mellen	No adulteration found.
Sept. 1	C. A. Magnus, Glen Flora..	Standard.	Mar. 9	*W. F. Hall, Auroraville....	No adulteration found.
Sept. 1	*Mrs. D. Koenig, Oalunetville.	No adulteration found.			
Nov. 10	*F. B. Feilrick, Marinette....	No adulteration found.			
Dec. 5	*Mrs M. E. Hugo, Mineral Pt.	No adulteration found.			

* Submitted by.

SACCHARINE PRODUCTS—Continued.
Maple Sugar and Maple Syrup—Standard.

Date	Bought or Submitted for	Bought of or submitted by	Date	Bought or Submitted for	Bought of or submitted by
1916					
May 1	Maple syrup	Geo. M. May, Wausau.	April 11	Maple syrup	*Ferdinand John, Bowler.
May 12	Maple syrup	Louis Sund, Clam Falls.	April 14	Maple syrup	*N. Luncke, Durand.
Aug. 24	Maple syrup	*Wm. Abrahams, Manawa.	April 17	Maple syrup	Sherwood Cafe, Green Bay.
April 10	Maple syrup	*C. H. Wegner, Wausau.	April 19	Maple syrup	*Palmer & Sipek, Antigo.
	Maple syrup	*C. H. Wegner, Wausau.	April 23	Maple syrup	*Palmer & Sipek, Antigo.
			May 19	Maple syrup	*C. S. Roberts, Balsam Lake.

* Submitted by.

Maple Sugar and Maple Syrup—Not Standard.

Date	Bought or Submitted for	Bought of or Submitted by	Remarks
1916			
Aug. 5	Maple syrup	Emerich Mercantile Co., Merrill.....	Below standard in total solids.
1917			
Mar. 90	Maple sap syrup.....	Cavaney & Deisch, Whitewater.....	Below standard in total solids.
Mar. 90	Maple sugar	*Mrs. R. J. Small, Deerbrook.....	Sample was semi-solid. Contained excessive water.
April 16	Maple syrup	*Wm. Schoeneberg, Wausau.....	Below standard in total solids.
April 17	Maple syrup	Cut Rate Grocery, Green Bay.....	Below standard in total solids. Misbranded in that net contents were not stated.
April 22	Maple syrup	*Monarch Grocery Merrill.....	Below standard in total solids.
April 30	Maple syrup	Stolte, Dangel & Foss Co., Reedsburg....	Below standard in total solids. Misbranded in that the net contents and name and address of the manufacturer, jobber or dealer were not stated.
May 2	Maple syrup	Ed Wolf, Hillsboro.	Below standard in total solids. Misbranded in that the net contents and name and address of the manufacturer, jobber or dealer were not stated.

May 2	Maple syrup	Ed Wolf, Hillsboro.....	Below standard in total solids. Misbranded in that the net contents and name and address of the manufacturer, jobber or dealer were not stated.
May 2	Maple syrup	Ed Wolf, Hillsboro.....	Below standard in total solids. Misbranded in that the net contents and name and address of the manufacturer, jobber or dealer were not stated.
May 8	Maple syrup	*J. A. Hielgols, Hillsboro.....	Below standard in total solids.
May 14	Maple syrup	*L. D. Moses, Ogdensburg.....	Below standard in total solids and contains calcium malate sediment.
June 20	Maple syrup	C. F. Folkman, Clintonville.....	Below standard in total solids. Misbranded in that the net contents and name and address of the manufacturer, jobber or dealer were not stated.
June 21	Maple syrup	A. S. Sueger, Viroqua.....	Below standard in total solids.

* Submitted by.

Miscellaneous Saccharine Products.

Date	Bought for	Labeled	Bought of	Remarks
1916				
May 3	Log Cabin Ready Spread...	Log Cabin Ready Spread.....	Boller & Kamrath, Wausau.....	Passed.
Nov. 13	Sorghum	Pure Country Sorghum.....	Smith & Jones, Mauston.....	Standard.
Nov. 16	Candy .....	.....	*Dr. Evans, University Clinic, Madison.....	Found to be dyed with Rhodamnia.
Dec. 1	Powdered cane sugar.....	.....	*Farmers Produce Co., Chippewa Falls.....	Found to contain about 2% of corn starch.
1917				
Jan. 18	Sorghum	Pure Country Sorghum..... No. 5 can contains 4 lbs. 10 oz. avd. net.	P. M. Berg, Stone Lake.....	Misbranded, short weight.
Feb. 16	Pure Sorghum	Pure Country Sorghum 1 lb. 8 oz....	J. M. Bienfang, Jefferson.....	Standard.

* Submitted by.

SUBMITTED MISCELLANEOUS PRODUCTS.

Date	Sample of	Submitted by	Remarks
1916			
Sept. 19	Black bridge paint.....	Wisconsin Highway Commission, Madison	Linsed oil, 64.3%; turpentine, 5.7%; and benzine, 30% (vehicle).
Sept. 19	Green bridge paint.....	Wisconsin Highway Commission, Madison	Linsed oil, 66%; turpentine, 5%; and benzine, 28% (vehicle).
Oct. 25	Ore	Kohl Jewelry Co., Monroe.....	Found to be galena lead sulphide.
Oct. 30	Epsom salts	Bemis-Hooper-Hays Co., Oshkosh.....	Tested for saltpeter, none found.
Dec. 16	Epsom salts	Wm. F. Rennpfert, Marquette.....	Tested for saltpeter, none found.
Dec. 20	Denatured alcohol	Staley & Breul, Wilmet.....	Absolute ethyl alcohol, 85.23%; absolute methyl alcohol, 2.48%.
Dec. 28	Potassium hydroxide	Meuford Chemical Co., Matford.....	Found to contain 66% of potassium hydroxide and 34% of potassium carbonate.
1917			
Feb. 2	Soap chips	Miss Eckhardt, Home Economics Dept., Madison.	No adulteration found.
Feb. 2	Soap chips	Miss Eckhardt, Home Economics Dept., Madison.	Mixture of soap and borax, approximately 70% soap and 30% borax.
Feb. 14	Caustic alkali	Robt. Purdy, Crandon.....	Found to contain 47% of potassium hydroxide and 36% of potassium carbonate.
Mar. 1	Rat corn	Martens Bros., Kilbourn.....	After analysis showing the absence of alkaloids, cyanides, arsenic and other common poisons used in preparations of this kind, the sample was tried out on a rat and it was found that it had no ill effect whatever on the rat.
Mar. 5	Paint oil	A. W. Manthey & Co., Gleason.....	Not labeled in compliance with law.
Mar. 6	Yellow mixed paint.....	Gov. E. L. Philipp, Madison.....	Pigment: Silica..... 12.0% Barium sulphate..... 14.4% Lead sulphate..... 14.3% Lead chromate..... 5.3% Volatile thinner (mostly benzine)..... 5.74% Linsed oil..... 31.62%
Mar. 14	Antipyrin	Max J. Goetz, Milwaukee.....	No adulteration found.
June 20	Flaxseed compound	Boettcher-Cady Hdw. Co., Brinnauwood.....	Not labeled in compliance with law.
June 27	White lead	Sam Miller, Madison.....	Badly adulterated with barytes or barium sulphate.

*Bought of.

TURPENTINE.

Turpentine—Standard.

Date	Purchased of	Manufacturer or Jobber
1916		
July 6	H. Kuckstorf & Son, Leopolds.	Economy Service Co., Oshkosh.
July 7	Fred A. Grosskopf, Pella.	John Fritzlaiff Hardware Co., Milwaukee.
July 12	F. F. Koske, Puleifer.	
July 13	H. Bocker & Son, Croll.	Wadham's Oil Co., Milwaukee.
July 14	Smith & Greenwald, Powers Lake.	L. Perrigo Co., Allegan, Mich.
July 19	H. Horn, Loyal.	
July 19	Walter Fauss, Loyal.	Wadham's Oil Co., Milwaukee.
July 19	John McGonigal & Son, Loyal.	Southern States Turpentine Co.
July 26	Stroota Hardware Co., Abbotstford.	American Linseed Oil Co.
July 26	Fred L. Parish, Abbotstford.	St. Paul White Lead & Oil Co., St. Paul.
Aug. 3	A. J. Harlander, Ellsworth.	Pittsburgh Plate Glass Co., Minneapolis.
Aug. 4	Hassley & Schmitt, East Ellsworth.	Hackett, Gats & Hurdy Co., St. Paul.
Aug. 24	Angvick House Furniture Co., Ashland.	Farwell, Ogum & Kirk Co., St. Paul.
Sept. 11	Die Noer, Colfax.	
Sept. 12	Hawkins Hardware Co., Hawkins.	Naval Stores Co., Chicago.
Sept. 26	Andrew Smith, Two Rivers.	
Sept. 26	Foster Mercantile Co., Salem.	Merchants Coffee Co., Louisville, Ky.
Oct. 5	The Grinnell-Rounsavall Co., New Richmond.	Noyes Bros. & Cutton, St. Paul.
Oct. 11	Otto C. Nessa, Osseo.	Spence, McCord & Co.
Oct. 21	Branstad Drug Co., Eau Claire.	
Oct. 21	Burnham, Benson Hardware Co., Eau Claire.	Farwell, Ogum & Kirk Co., St. Paul.
Oct. 21	Otto Boberg, Eau Claire.	
Oct. 21	Kohlhepp Bros., Eau Claire.	Minnesota Linseed Oil & Paint Co.
Oct. 23	Cass Drug Store, Eau Claire.	Noyes Bros. & Cutler Co., St. Paul.
Oct. 23	Kiel Mercantile Co., Kiel.	Ohio States Linseed Oil Co., Cleveland.
Oct. 28	L. J. Hanson, Eau Claire.	St. Paul White Lead & Oil Co., St. Paul.
Oct. 28	Will C. Johnson, Eau Claire.	
Nov. 8	G. W. Gilchrist.	
Nov. 20	O. C. Calles, Wausau.	Winona Oil Co., Winona, Minn.
Nov. 20	F. Kurth, Wausau.	
1917		
Jan. 10	Utgard Hardware Co., Amherst.	
Mar. 6	Moody-Baker-Elliott Co., Ellsworth.	Pennsylvania Oil & Supply Co.
Mar. 6	Sutherland's Pharmacy, Hudson.	

TURPENTINE—Continued.**Turpentine—Standard—Continued.**

Date	Purchased of	Manufacturer or Jobber
Mar. 6	Paskin Cooperative Mercantile Co., Paskin Lake.	Wadham Oil Co., Milwaukee. American Merchants' Syndicate, Chicago. Fancy Sample Hill Co., Minneapolis.
Mar. 7	Edw. Stronks, Baldwin	
Mar. 12	Hopps Hardware & Implement Co., Amery	
Mar. 21	O. E. Johnson, Thorp	
Mar. 21	Thorp Hardware Co., Thorp	
Mar. 21	O. E. Johnson, Thorn	Henry Bonn Co., Milwaukee. Northwestern Oil Co., Superior. Ohio State Linseed Co., Cleveland. Plastic Paint Co. Ohio State Linseed Co., Cleveland. Minneapolis Drug Co., Minneapolis.
Mar. 21	G. O. Hanson, Osceola	
Mar. 21	G. W. Montgomery, Dresser Junction	
April 2	F. M. Meyer, Deerfield	
April 4	Crandon Hardware Co., Crandon	
April 20	A. O. Westburg, Grantsburg	
May 23	F. J. Kobarie, East Elsworth	
June 11	Stowe Mercantile Co., South Byron	
June 18	Koppin & Koppin, Iron River	
June 19	Sweet's Pharmacy, Roberts	
June 19		

TURPENTINE—Continued.

Not Standard.

Date	Purchased of	Manufacturer or Jobber	Per cent of adulteration shown on polymerization
1916			
June 27	Miller Bros., Irma	Southern States Turpentine Co., Cleveland	70.0
June 28	A. F. Radtke, Nellisville	Southern States Turpentine Co., Cleveland	70.0
June 28	C. C. Sulteman Co., Nellisville	Inter-State Oil Company, La Crosse	25.0
June 28	L. Hoyoss, Prairie Farm	National Linseed Company, Cleveland	80.0
June 28	Geo. E. Scott Estate, Prairie Farm	O. C. Calles, Wausau	80.0
June 28	L. H. Jones, Schofield	Southern States Turpentine Co., Cleveland	21.0
June 28	Wm. Noll Hardware Co., Marshfield	Southern States Turpentine Co., Cleveland	20.0
Aug. 2	Antigo Hardware Co., Antigo	Southern States Turpentine Co., Cleveland	30.0
Aug. 11	Pease Hardware Co., Superior	Southern States Turpentine Co., Cleveland	23.0
Aug. 16	C. J. Nelson, Racine	Southern States Turpentine Co., Cleveland	12.0
Sept. 1	Schlatter Hardware Co., Appleton	Winona Oil Co., Winona, Minn.	32.0
Sept. 20	Curran's Drug Store, Eau Claire	Winona Oil Co., Winona, Minn.	10.0
Sept. 21	W. L. Nichols, Eau Claire	Winona Oil Co., Winona, Minn.	13.0
Oct. 21	G. W. Gluchrist, Eau Claire	Winona Oil Co., Winona, Minn.	10.0
Oct. 21	Frank Steeps, Oshkosh	Standard Paint & Lead Works, Cleveland	63.0
Oct. 24	Hoechn Pharmacy, Fall Creek	Winona Oil Co., Winona, Minn.	trace
Nov. 10	C. C. Sulteman Co., Nellisville	Winona Oil Co., Winona, Minn.	25.0
Nov. 15	Wm. Sell Hardware Co., Wausau	Winona Oil Co., Winona, Minn.	18.5
Nov. 20	Pease Hardware Co., Superior	Winona Oil Co., Winona, Minn.	23.5
Nov. 22	Pease Hardware Co., Superior	Winona Oil Co., Winona, Minn.	21.0
Dec. 9	Wm. Sell Hardware Co., Wausau	Winona Oil Co., Winona, Minn.	21.0
1917			
Mar. 16	*Gulnn Bros., Hannibal	C. H. O'Neill & Sons Co., Milwaukee	65.6
April 6	Burt Hasterman, North Milwaukee	American Turpentine Co., Cleveland	27.0
May 1	Hammond-Chandler Lumber Co., Rice Lake	Southern States Turpentine Co., Cleveland	62.0
May 17	Frigina Bros. Fertig Co., Arcadia	Southern States Turpentine Co., Cleveland	100.0
June 11	F. J. Kabarle, East Ellsworth	Southern States Turpentine Co., Cleveland	100.0

* Standard, but not labeled in compliance with law.

TURPENTINE—Concluded.
Submitted Samples.

Date	Submitted by	Remarks
1916		
Aug. 1	Miller & Mattaumb, Cream, R. 1.	Standard.
Oct. 10	C. J. Nelson, Racine.	Adulterated about 15%.
Oct. 19	Schlafer Hardware Co., Appleton.	Adulterated about 22%.
Dec. 14	A. H. Kleberg, Plover.	Standard.
1917		
Jan. 15	W. N. Fitzgerald, Board of Public Affairs.	Adulterated about 24%.
Jan. 15	W. N. Fitzgerald, Board of Public Affairs.	Standard.
Jan. 20	W. N. Fitzgerald, Board of Public Affairs.	Adulterated about 20.4%.
Jan. 20	W. N. Fitzgerald, Board of Public Affairs.	Adulterated about 17.2%.
Jan. 20	W. N. Fitzgerald, Board of Public Affairs.	Standard.
Jan. 20	W. N. Fitzgerald, Board of Public Affairs.	Standard.
Jan. 20	W. N. Fitzgerald, Board of Public Affairs.	Standard.
Jan. 20	W. N. Fitzgerald, Board of Public Affairs.	Standard.
Jan. 24	Board of Control, Madison.	Adulterated about 60.1%.
Jan. 24	Board of Control, Madison.	Adulterated about 55.6%.
Jan. 24	Board of Control, Madison.	Adulterated about 53.6%.
Jan. 24	Board of Control, Madison.	Adulterated about 20.4%.
Jan. 24	Board of Control, Madison.	Adulterated about 20%.
Jan. 24	Board of Control, Madison.	Standard.
Jan. 24	Board of Control, Madison.	Standard.
Jan. 24	Board of Control, Madison.	Standard.
Jan. 24	Board of Control, Madison.	Standard.
Jan. 24	Board of Control, Madison.	Standard.
Jan. 24	Board of Control, Madison.	Standard.
Jan. 24	Board of Control, Madison.	Standard.
Jan. 25	W. N. Fitzgerald, Board of Public Affairs.	Adulterated about 22.8%.
Jan. 25	W. N. Fitzgerald, Board of Public Affairs.	Standard.
Feb. 10	W. N. Fitzgerald, Board of Public Affairs.	Standard.
Mar. 6	Gov. E. L. Philipp, Madison.	Not adulterated but an inferior grade.
Mar. 17	Board of Control, Madison.	Adulterated about 30.8%.

VINEGAR.

Submitted Samples Tested for Acetic Acid.

Date	Submitted by	Grams acetic acid per 100 ccs.	Date	Submitted by	Grams acetic acid per 100 ccs.
1916			1917		
July 1	Amery Mercantile Co., Amery.....	4.12	Feb. 22	Chas. Webb, Evansville (sample 1).....	3.72
Aug. 25	George F. Crawford, Beloit.....	3.03	Feb. 22	Chas. Webb, Evansville (sample 2).....	3.60
Sept. 8	C. Weber, Beloit (sample 1).....	3.41	Feb. 22	Chas. Webb, Evansville (sample 3).....	1.32
Sept. 8	C. Weber, Beloit (sample 2).....	2.46	Feb. 22	Chas. Webb, Evansville (sample 4).....	4.68
Sept. 8	C. J. Watts, Whitewater.....	3.50	Mar. 1	A. W. Hellman, Madison.....	3.76
Sept. 23	Anna M. Woodbury, Beloit.....	2.83	Mar. 7	Geo. Thomas Speice, Clinton (sample 3).....	4.0
Sept. 25	J. F. Bohling Co., Poynette.....	2.58	Mar. 7	Geo. Thomas Speice, Clinton (sample 4).....	5.0
Oct. 2	F. N. Smith, Whitewater (sample 1).....	4.77	Mar. 7	Geo. Thomas Speice, Clinton (sample 5).....	5.3
Oct. 2	F. N. Smith, Whitewater (sample 2).....	4.83	Mar. 7	Geo. Thomas Speice, Clinton (sample 6).....	5.0
Oct. 2	F. N. Smith, Whitewater (sample 3).....	4.79	Mar. 22	Geo. Thomas Speice, Clinton (sample 1).....	4.60
Oct. 2	F. N. Smith, Whitewater (sample 4).....	4.76	Mar. 22	Geo. Thomas Speice, Clinton (sample 2).....	4.07
Nov. 1	F. C. Hazard, Poynette (sample 1).....	3.23	Mar. 22	A. R. Tibbits, Eau Claire.....	3.4
Nov. 1	F. C. Hazard, Poynette (sample 2).....	3.70	Mar. 22	M. N. Wheeler, Beloit.....	5.13
Nov. 1	F. C. Hazard, Poynette (sample 3).....	2.5	Mar. 22	W. F. Weckler, Ft. Atkinson (sample 1).....	2.1
Nov. 1	F. C. Hazard, Poynette (sample 4).....	3.96	Mar. 22	W. F. Weckler, Ft. Atkinson (sample 2).....	0.62
Nov. 1	F. C. Hazard, Poynette (sample 5).....	3.64	April 9	Louis Specht, Madison.....	1.98
Nov. 1	F. C. Hazard, Poynette (sample 6).....	4.222	April 16	A. N. Fredrickson, Galeville.....	4.1
			April 28	H. Lanfel, Clinton.....	6.8
			May 4	Louis Egebrecht, Mauston (sample 1).....	0.6
			May 4	Louis Egebrecht, Mauston (sample 2).....	5.0

WATERS.

Date	Submitted by	Remarks
1916 Nov. 1	James Van Duser, Whitewater.....	Colon present in 1 cc. and 10 cc. portions. Count plain agar 11,000 per cc. Staining: Some colon, majority longer bacilli that do not ferment sugars. Absolutely dangerous as a potable water.
1917 Mar. 28	Capitol Power & Heating Plant, Madison.....	Sample was to be tested for dissolved oxygen to check up corrosion on pipes. Results showed about 50% saturation. No chlorine present. (Sample marked "Before treatment.")
Mar. 28	Capitol Power & Heating Plant, Madison.....	Sample was to be tested for dissolved oxygen to check up corrosion on pipes. Results showed about 37% saturation. No chlorine present. (Sample marked "After treatment.")
April 12	Mr. Smith, Supt. Water Works, Madison.....	All results reported parts per million: Free ammonia 0.078 Albuminoid 0.05 Nitrites none Alkalinity as calcium carbonate..... 285.0 Hardness 284.0 Oxygen consumed 0.73 Total solids at 103° C. 361.0 Loss on ignition 142.0 Fixed residue 219.0 Nitrate (No. 3) radical..... 0.130 Chlorine 4.0 Silica 11.6 Iron (Fe-O ₃) radical and aluminum (Al-O ₃) radical..... 1.1 Calcium 66.6 Magnesium 89.4 Sulphate (So ₄) radical 25.1 Sodium 7.28 Potassium 3.2

Respectfully submitted,
HARRY KLUETER,
Chemist.

**REPORT OF C. E. LEE, ASSISTANT DAIRY AND FOOD
COMMISSIONER AND DAIRY SPECIALIST**

HONORABLE GEORGE J. WEIGLE,
Dairy and Food Commissioner.

Sir: I hereby submit a report of the work done for the year ending June 30, 1917. I have had charge of the work of licensing operators of butter and cheese factories and butter and cheese makers, and the tabulation of dairy statistics for the year 1915, published in February, 1917.

Personally I assisted one of the inspectors in market milk inspection in three of the large places. In each of the cities where market milk inspection work was done, conferences were held with the local board of health, and in two cities, with the members of the city council. One month after the investigation of the milk supply was completed, the council of one of the cities requested that an address be delivered before that body that they might have first hand information of actual conditions found. Suggestions were made to them as to certain changes in the method of supervising the milk supply and inspecting the dairy farms. The local newspapers gave splendid cooperation in all of this work. In another city, at the request of the Women's Federation, I made a study of the source of the milk supply. At the close of that work a conference was held with the health officials, city council, officers of the Women's Federation and all of the local milk producers except one. This meeting was the means of bringing about a closer cooperation between the producers, consumers and city officials. One of the dairymen remarked: "I now understand the dairy laws, the city ordinance relating to the milk supply, and it will not be a hardship to comply." During "Baby Week" I presented market milk problems before meetings held in two cities, and at two other centers I presented the same material before the Woman's Clubs.

Much good has been accomplished; it has been favorably commented on by producers and consumers alike and they welcome more frequent inspection. The field is here; a cooperative spirit exists and the opportunity is offered to show to those who are interested in market milk problems that the work of the department is constructive and not destructive. More frequent inspection of market milk should be made. As a class the producers of market milk are fair-minded, but in many cases they fail to do their best because they are not in a position to see their own faults and to make necessary changes unless they are pointed out to them by inspection. The work of the department

should be enlarged so as to include bacteriological examination of milk sold in the cities.

Having charge of the work relating to inspection of butter and cheese factories, condensories, milk plants and dairy farms, a great deal of my time has been devoted to this work. All reports of such inspections have been closely studied by me. It has necessitated the reinspection by me of factories and dairies, located in various parts of the state, as well as conferences with some of the men in their respective territories. At the time of the epidemic at Galesville last March I made a thorough inspection of the source of the milk supply of that city. This work was done during the same week that the representatives of the State Board of Health conducted its investigation.

During the year I examined 1271 butter factory and 2944 cheese factory inspection reports which were filed at the office. I also examined 3281 dairy inspection reports.

There are a few operators of butter factories who do not seem to watch closely the water, fat and salt content of their product. This results in a finished butter that does not contain the required amount of butter fat. To check this evil I have collected several samples and submitted them to the chemist. Two manufacturers have been prosecuted, and one case is still pending.

There is an increasing demand upon this department for speakers at various local conventions, butter and cheese makers' and operators' meetings and various other community gatherings. The value of this work cannot be estimated. By this means the work of the department has been explained to a large number of dairymen and consumers of dairy products otherwise not reached. The cost of this work has been nominal, expenses being paid by those in charge of the various meetings addressed. I personally addressed thirty-five such meetings.

Many requests are received from various sources for assistance to determine if the testing of milk and cream for butter fat at butter and cheese factories is correctly done. The demand for this kind of work has increased, due to the greater value of dairy products as compared with former years, increased activity in cow testing association work and factory operators and dairymen watching details more closely. This work on the part of the inspectors has revealed the fact that very often complaints are made on suspicion only and not based upon facts. Operators of cheese factories very often have suspected low testing or possibly watered milk being delivered to their plant when a low yield was the only determining factor, the milk never having been tested for its fat content. It has also been found that there are a number of men operating the Babcock test who did not fully understand its correct use. The dairy industry would be greatly benefited if the state would in some manner regulate or supervise every operation of the Babcock test.

MARKET MILK INSPECTION

At a meeting of all the inspectors, held in January, of this year, problems involved in doing effective market milk inspection were considered. Each man was to make a systematic inspection of the milk supply of the various cities and villages in his territory and to make a report of such findings to the office. All of these inspectors realized that this work must be carried on in such a manner that it would improve the future milk supply of the state. They also realized that in a number of territories, dairymen often felt that it was to their advantage to sell milk to butter, cheese and condensing plants rather than to sell it direct to city consumers or local milk plants, because the extra inducement in possibly greater returns was not sufficient.

Dairymen are expected to produce for the people of the cities their required amount of milk and cream, hence it is an industry that should receive full consideration by the leading dairymen.

The city trade, as a market for good milk and cream, should at all times offer to the dairymen inducements which are equal or better than those offered by any other market, and the consumers must be willing to pay for quality milk a price that makes it profitable to the dairyman to produce milk under the best conditions. In selling milk in cities and villages, the expense to the producers is slightly greater than when selling to butter and cheese factories.

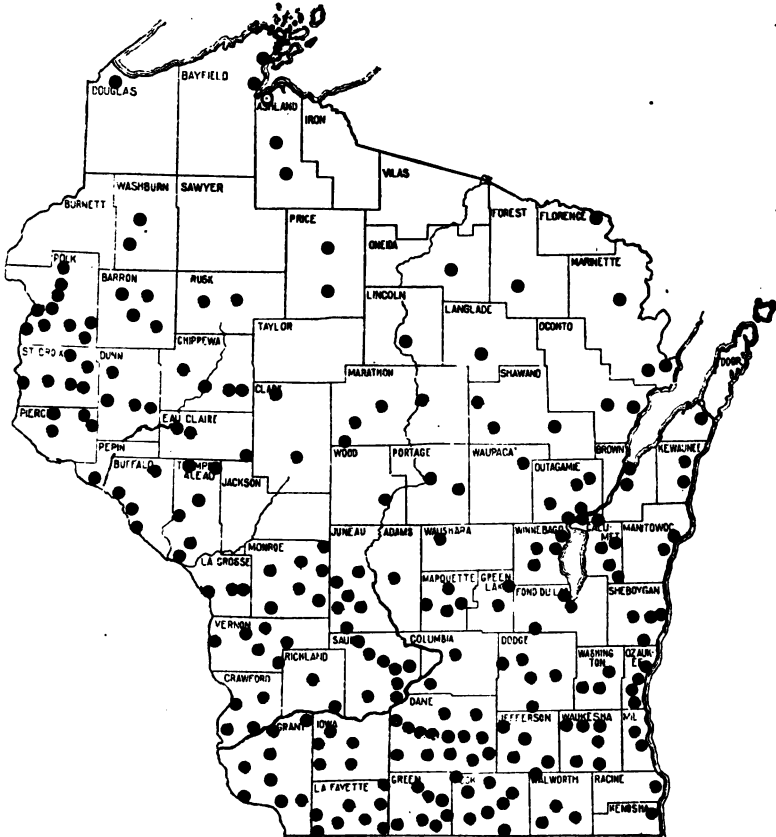
The consumers of milk and cream may be more exacting than the operators of factories, but no more so than the standard already maintained by the leading dairymen of every community. It is not the purpose of this department or of any of the inspectors to formulate a fixed plan as to how the milk in any city shall be handled because of the numerous problems and factors involved, but there is a fixed standard relating to cleanliness and sanitation of milk offered for sale as human food.

Manner of Making Inspection

The state is divided into ten districts, each one in charge of an inspector. Since the size of territory covered by each man is determined by the number of butter and cheese factories in operation, with little reference to the number of cities and villages, certain sections of the state may have been more thoroughly covered than others in making market milk inspection. For each city visited, if milk or cream is delivered by a dealer or a dairyman, a sample of his product is bought, a sediment test is made, very often in his presence; later an examination is made of the milk as to its flavor, fat content and solids not fat, and the sample of cream is tested for its fat content. If it is found that the milk falls below the legal standard (8.5%) of solids not fat and (3%) of milk fat, and the cream falls below (18%) milk fat, a sample is submitted to the laboratory for verification. All milk plants in the cities or villages visited are inspected with a view of determining the manner in which dairy products are handled and whether or not all utensils and buildings are maintained

in a sanitary condition. The general condition of the milk as it is delivered is also under inspection.

The farms owned by the dairymen who sell their product direct to the consumer, as well as some of the farms where milk for the city dealers is produced, are visited and a thorough inspection of the barn is made, also of the place where the milk is bottled or stored and the



LOCATION OF CITIES WHERE THE MARKET MILK SUPPLY WAS INSPECTED
IN 1917

manner of cleaning and storing the utensils. In a few cities a meeting of the producers and the consumers has been held for the purpose of acquainting them with conditions found, whether changes are necessary, and if so, how they should be made.

For the year ending June 30, 1917, 210 cities or villages were visited by a representative of this department. Very little time was devoted to cities where a local milk inspector is employed aside from cooperation in the inspection of the dairies. In these cities 691 samples of milk were collected from nearly as many dealers or persons selling milk. In a few cases duplicate samples were collected

from some dairies if more than one wagon was used. The average per cent of fat in the 691 samples was 3.8. Only seven samples, or 1.01% of all the samples tested contained less than three per cent fat. Two hundred ninety-five or 42.69% of all the samples contained 4.0 to 5.6% fat. The 347 samples offered for sale as cream contained an average of 24.1% of fat, with 20 or 5.76 per cent of all samples containing less than 18% of fat. It was also found that 50% of the cream samples containing less than 18% of fat were bought in one large city where the dealers obtained their supply of cream from a creamery. A few of the other samples of cream found to contain less than the legal requirement of fat, were from factories selling a limited amount.

It is a credit to the milk dealers and to the dairymen when milk and cream of such high fat content is sold. A few of the samples of milk below standard—found to contain less than the legal requirement of fat, 3%, were the normal product of a herd.

TABLE RELATING TO CITY MILK INSPECTION—1917.

MILK				CREAM			
Per cent fat	No. of samples	No. samples in group	Per cent of samples of each group	Per cent fat	No. of samples	No. samples in group	Per cent samples each group
2.5	2	7	1.01	12	1	20	5.76
2.6	1			13	—		
2.7	2			14	1		
2.8	—			15	5		
2.9	2			16	4		
				17	9		
3.0	14	131	18.93	18	25	244	80.31
3.1	13			19	23		
3.2	34			20	30		
3.3	19			21	26		
3.4	51			22	31		
				23	25		
3.5	38	258	37.33	24	26		
3.6	74			25	25		
3.7	52			26	18		
3.8	70			27	15		
3.9	24						
4.0	78	213	30.82	28	15	73	21.03
4.1	34			29	14		
4.2	53			30	6		
4.3	21			31	12		
4.4	27			32	6		
				33	5		
4.5	15	58	8.40	34	8		
4.6	20			35	3		
4.7	10			36	3		
4.8	10			37	1		
4.9	3						
5.0	12	24	3.47	38	4	10	2.86
5.1	1			39	—		
5.2	4			40	1		
5.3	1			41	2		
5.4	3			44	1		
5.5	2			50	2		
5.6	1						
3.8 Average.		691 Total		24.1 Average			

Pasteurized milk and cream is sold in twenty six different cities. In one city there are five dealers who furnish 50 per cent of the milk sold and only one of these dealers sells a pasteurized product.

Manner In Which City Milk Is Secured Varies

In making a tabulation of the inspection reports it was found that the market milk supply of the various cities and villages was not reaching the consumers in the same manner, but all of them fall within the following groups:

Group 1—Cities where nearly all of the milk is handled by dealers who depend upon dairymen for their supply; the city of Milwaukee for example. These dealers, in most cases, have erected a suitable place for the proper handling of the product until it is delivered to the consumers' homes, hotels or restaurants. In other words these dealers act as middlemen or distributors, hence the work performed by the producers is reduced and their income is less per one hundred pounds of milk than if they bottled or delivered their own product. This is out of the question in the larger cities. When the dairyman sells his output to a dealer he is paid a fixed price per can or 100 pounds of milk delivered. The actual fat content of the milk may or may not be considered. A number of these milk plants are so equipped as to economically handle the surplus, either in the form of butter, ice cream or cottage cheese, etc. A large per cent of the milk is pasteurized before it is delivered to the consumers and the bottles sterilized before they are filled.

Group 2—Comprises the cities where possibly fifty per cent or more of the milk is distributed in the same manner as in Group 1, while the balance of the milk is delivered to the consumers by dairymen who sell their own product, bottled at the farm. Madison may be placed in this group.

Group 3—The large number of villages and cities of the state that do not have a milk plant are placed in this group. Possibly fifty per cent or more of the milk is delivered by dairymen who sell the product of their own dairy. The consumers not served by these dairies obtain their milk from neighbors, who may own one or more cows. The milk from these "family cows" is sold in bottles or in pails furnished by the person who sends for the milk within a short period after it has been produced.

Group 4—Consists of the villages or communities where the entire population depends upon families who own one or more cows. In a few cases families are supplied with milk by a dairyman who passes by enroute to the butter or cheese factory. At times the pail may be seen placed in a box located on a post near the roadside.

Consumers Demand Protection

There are two main questions generally asked by the people of the cities regarding the milk and cream supply, namely: What is the fat or cream content of the milk and will the cream whip? and, second, is the milk and the cream produced under cleanly conditions?

The consumers may not be more critical, but the increased price paid per quart of milk has made them more watchful and observant as to what they are paying for. Women's organizations in the larger cities, local editors and others have taken a hand in this problem and have enlightened the consuming public. Milk and cream are necessities in every home. There is a ready and constant market for the entire output of a number of large dairies. The amount of milk consumed by the city families will, in a measure, depend upon the satisfaction that the product gives. The future of market milk is therefore a problem that is of vital importance to the dairymen. In the larger cities the dealer or distributor may be doing his part well, but his efforts are fruitless unless he is assured of a clean product from the dairymen. It is the source of the supply that fixes the standard of market milk and increases the consumption.

The value of the work carried on by the representatives of the Dairy and Food Department and local inspectors to the dairymen who furnish milk to the people of the cities and villages cannot be estimated. It is the one assurance to the consumers that they are obtaining food that is reasonably safe. Inspection has practically eliminated adulteration of all kinds. It has made the careless milkmen see the necessity of producing milk under cleanly conditions and the importance of having laws dealing with sanitation. It is a protection to the dairymen who operate sanitary dairies. To them it is a guarantee against unfair competition.

A representative of the Dairy and Food Department when making regular inspections is in a better position to assist not only the dealers in pointing out the necessary changes to be made, but to show them the ideal manner of handling the product efficiently and economically. To the milk producers he can give an idea as to the methods followed by the leaders in his line. Very often inspectors, in performing their regular duties, may be called upon to give an explanation of a certain article that a dairyman has read with reference to clean milk production, barn construction, proper lighting and ventilating of dairy buildings. At times dairymen desire to make changes in their barns and follow out suggestions made by the inspector regarding new floors, stall arrangements, etc.

It Pays To Be A Model Dairyman And Produce Clean Milk

There are a large number of farmers who may be classed as model dairymen, and they have made the production of market milk profitable. They realize that high standard of quality in dairy products has its beginning at the farm and that the milk for the table, be it for his own family or a city neighbor, must come from healthy cows and that they must at all times be fed on good, clean, wholesome food. It is this class of dairymen who say it pays, regardless of what

the law may be, to house the dairy cows in a barn that is reasonably clean and well-lighted and ventilated; barn floors so constructed and stalls so arranged that the cows may keep themselves clean. These men use an abundance of whitewash on the interior of the barn and other dairy buildings because of its sanitary effect. Whitewash adds to the appearance of the room, increases its value and lightens the dark corners. There should be on every farm a suitable place for storing milk until it is delivered. Certain cities have placed this as one of the requirements that must be met by the producers before the milk may enter a city. In the milk house there should be a suitable tank of water in which to place the cans of milk. When the milk is bottled at the farm, room must be provided in the milk house for the proper handling, washing and sterilizing and filling of the bottles.

According to the reports of the inspectors, dairy utensils used by the dairymen producing market milk were, as a rule, found clean but not sterilized. Many dairymen depend upon warm water and some cleansing compound to do the necessary work in cleaning pails, cans and bottles. This is not sufficient. Boiling water or steam should be used in the final treatment of dairy utensils after they have been thoroughly cleaned. Sunshine and pure air are two very necessary aids in the successful production of clean milk. Clean milk, properly cooled, stored and delivered in clean containers will insure maximum consumption of milk and cream. This is within the means of every dairyman.

In future market milk inspection it would be well to do a portion of the work during the summer months and to place greater emphasis on the need of sterilization of utensils. Some effort should also be made to interest city officials to control or in some measure supervise the milk supply.

It also seems pertinent that all milk dealers who buy part or all of their supply should be required to pasteurize all of the milk before it is delivered. I also believe that in the control of the future market milk supply this department should be given authority to formulate rules and regulations governing the manner in which it shall be produced, handled and delivered.

WHEY CREAM PRODUCTION

The production of whey cream in Wisconsin had its beginning in the Swiss cheese territory, because in the manufacture of that kind of cheese there is an unavoidable loss of approximately one-fifth of the total fat in the original milk. The introduction of the separator in a number of these factories for the purpose of recovering this butter fat, otherwise lost in the whey, has been the means of conserving a large amount of fat for human food.

In the manufacture of American cheese the loss of fat in the whey is only one-half of that lost in the making of Swiss cheese. The operators of these American cheese factories studied the problem and as a result whey separators were introduced in the larger factories. Naturally the production of whey cream has increased very rapidly until this product in smaller and larger amounts is produced in nearly



SHADED COUNTIES INDICATE WHEY CREAM PRODUCTION, 1915

every county where cheese is manufactured. According to reports furnished the dairy and food commissioner in 1915 by the operators of factories making cheese, 455,298 pounds of whey butter, valued at \$113,273.07 was manufactured in factories located in twenty-two counties.

Other cheese factory operators reported that the value of other products, largely whey cream, was \$636,728.16, or a total value of whey butter and whey cream of \$750,001.23. In Manitowoc county, where

American cheese is made almost exclusively, whey cream or whey butter was produced in fifty two out of one hundred and eleven factories in operation. The income from this product was valued at \$62,606.35. These fifty-two factories were patronized by 1451 patrons who delivered 96,362,672 pounds of milk. The value of whey cream or whey butter per patron amounted to \$43.14, or a trifle less than six and one-half cents per one hundred pounds of milk. The fifty-nine factories that did not skim whey received 74,025,282 pounds of milk from 1731 patrons, showing that a number of the factories are too small to make the skimming of whey a profitable investment. In Green county, where Swiss cheese represents a very large per cent of the cheese made, there were 93 out of 161 factories that produced whey cream, valued at \$83,486.98. Since these factories were patronized by 841 dairymen, the income per patron from whey cream was \$99.27.

Whey cream production is a side line of the great cheese industry of the state and must receive greater consideration by the cheese factory operators and makers of the future than has been given to it in the past. In July, 1915, the dairy and food commissioner issued a leaflet for producers of whey cream. The final word in that manuscript was: "Good butter can be made from whey cream produced under sanitary conditions." This leaflet outlines the care of the cream and how it should be produced. The inspectors of the department for years have called the cheese makers' attention to the care of this valuable product. In spite of all of this work the manufacturers of whey butter have often made an article not of the best. This was not the fault of whey cream, but was due to carelessness on the part of the cheese makers in the handling of the product before it was made into butter or delivered to the churning plant.

During the past three months the inspectors have called on a number of plants where whey butter is made. They have explained the law and in a number of instances where the factory had on hand a large supply of cartons or wrappers, they have suggested a method of stamping or labeling that would meet the requirements of the law until a new supply is bought. They have also suggested how the cream shall be handled so as to result in butter of high quality, namely:

1. Skim whey cream so it will contain at least forty per cent of butter fat.
2. Provide a suitable place for the proper cooling of the cream immediately after the skimming is completed.
3. Store cream in a tank of cold water until it is delivered; stir thoroughly at least three times a day.

4. The tank of cold water used in holding the can of whey cream should be located in the factory make room or in a separate building.
5. Do not store whey cream in the cheese curing room.
6. Use clean cans.
7. Deliver the cream frequently and have it properly cooled when it leaves the factory.
8. Protect the can while in transit.
9. Thoroughly clean all utensils daily.
10. The cheese makers fail to "do their bit" in conserving the food supply when they do not produce whey cream of good quality.

Progress has been made in the short period that this law has been operative. Time will also eliminate the opposition that prevails against this regulation by the dealers in this product.

THE CREAM BUYING STATIONS

The manner of regulating operators of cream buying stations remains unchanged. Since local boards of health have charge of the licensing of these stations there is no uniform system governing their control.

In certain sections of the state there is a need for local markets where the dairymen may sell their products for cash or in exchange for food necessities. These stations may also be an inducement for farmers to put forth greater efforts in cream production.

There are certain sections of the state where these stations are detrimental to the progress of the dairy industry because they divide the product of a community and make it difficult for the local factory to exist. The cost of manufacturing butter from only one-half of the butter fat of the community is nearly as large as if all of it was handled, hence a few of the patrons carry the burden. An example of this may be seen in that portion of the state from Prairie du Chien to Hudson.

In fairness to both the creamery industry and the operators of cream buying stations, there is need of a uniform system for all of the stations' operators to follow. It may not be possible for this to be accomplished until they are governed by one central body, which should be the Dairy and Food Department.

THE LICENSING LAW

The law relating to the licensing of operators of butter and cheese factories and to the makers of butter and cheese became effective January 1, 1916.

The actual inspection work pertaining to the granting of a license did not begin until April, because all of the inspectors, during the winter months of that year, devoted all of their time to market milk and dairy farm inspection. It was also found that time should be granted the operators of butter and cheese factories to become familiar with the law and the rules and regulations. A number of cheese factory operators do not open their plants until April.

The inspectors reported on first inspection that the license rules and regulations were being complied with by the operators of a large number of butter and cheese factories, while time was extended to another group of operators in order to make such changes as were suggested by the inspector. In this group the number was no larger than was expected. The operator may have been located in a building that was old and not in good repair, others had deferred making changes until they had had the advantage of a personal visit of the representative of the Dairy and Food Department.

The licensing system was a new problem, yet in the majority of cases the operators as well as the makers were found to be more than willing to comply. Those that felt the license rules and regulations were unreasonable changed their attitude when the intent of the law was fully understood.

For the period January 1, to June 30, 1917, there were 779 operators of butter factories licensed in 1916 who had made application to the department for the 1917 renewal, and 83 permits issued to new operators, making a total of 862 operators of butter factories. Application for a renewal of license had been received from 2138 cheese factory operators and 442 permits were issued, a total of 2580.

In 1916, licenses were issued to 1028 butter makers; 852 of these had applied for a renewal of license by June 30, 1917, and 106 permits issued to men not engaged as butter makers in 1916. Licenses were issued in 1916 to 2457 cheese makers; 2159 of these applied for a renewal of license by June 30, 1917, and 632 permits were issued.

The licensing law has been one of the factors at work that has given to the butter and the cheese industry new life. A number of the old buildings that long ago had outlived their usefulness have been replaced by new structures; others have been repainted both inside and out. In several factories more light has been provided in both the intake and the making room. Greater care has been exercised by the cheese factory operators in providing more suitable

and more convenient curing rooms. The free use of whitewash on the walls of these rooms has given to them the appearance of newness and greater cleanliness.

Prior to the licensing law very few of the butter and cheese factory operators had provided a ventilating system for the plant. This feature alone required a great deal of the inspectors' time, but it has been worthwhile. It has resulted in better work rooms for the men who are required to spend several hours per day within these buildings, besides providing pure air in the rooms where dairy products are manufactured and stored.

The licensing law has made it possible to obtain repairs on factory floors where they were badly needed. Factory drains have been trapped and the general system of handling the factory sewage has been greatly improved. A number of factory operators requested the inspector to assist them in planning a cesspool or septic tank, while others have communicated with the office. In this work the plumbing department of the state Board of Health has rendered valuable service.

Improvements have been brought about in the manner of handling whey at cheese factories where whey cream is produced. A suitable place for the whey holding tank has been provided at a number of factories; changes have been made in the style of piping used and the manner of installing. The steam jets—impossible to clean—used in elevating the whey to the storage tank, have been replaced with a jet that may be taken apart and cleaned.

Greater care is being exercised by the cheese makers in the production of clean flavored whey cream. At a number of factories a suitable place for storing same has been provided. Aside from all of these improvements the licensing law has resulted in cleaner factories, more careful makers and a better grade of raw material. Indirectly this law has been the means of creating new life in the factory industry of the state and awakening dairymen patronizing these plants to their responsibility in the future quality of Wisconsin's dairy products.

Butter and Cheese Makers

The progress of the butter and cheese factory industry is in a large measure dependent on the ability of the men in charge of the factories to do their duty well. The work that has been done through inspection in the past, especially since the licensing law became effective, has had a tendency to bring about greater unification in the methods employed.

Cooperative butter and cheese factories are, as a rule, managed by one of the patrons or by a man who may be engaged in other lines of work, hence they do not give a great deal of time to the actual operation of the plant. The maker is therefore the man who

must look after the minor details as well as some of the larger problems involved in making the factory a success.

In many communities they are actual leaders in every activity that stands for progress. When the creamery or the cheese factory is a part of the community center, it is so largely because of the cooperation between the maker, the manager and the patrons.

The success of the licensing law is largely due to the spirit with which the makers entered into the work. They cooperated from the beginning in pointing out to the owner or to the management of the factory the changes that had to be made in order that the license law rules and regulations might be reasonably well complied with. In a number of instances the makers supervised the work of remodeling the factory, hence the experience they gained has been of value to them in the actual operation of the creamery or cheese factory and in maintaining the utensils in a sanitary condition. A large number of these men are interested in their work and more than willing to do their part in placing the industry they represent in the front rank among Wisconsin's agricultural activities. There are, however, men who are engaged in the work of making butter and cheese, that are careless and do not seem to understand the importance of cleanliness in the handling of dairy products used for human food. It is this class of men which should be watched more closely by the inspectors, and if necessary be eliminated from the ranks of licensed cheese or butter makers.

WORK OF THE INSPECTORS

During the first six months of the year the men in the field devoted nearly all of their time to the inspection of butter and cheese factories. This work was necessary prior to the granting of a license to each operator for the year 1916. In all, 4215 visits were made. The length of time devoted to each factory depended upon the conditions found, whether or not the operator could be easily located and the distance the inspector traveled. At the close of 1916, the unlicensed factories were far apart, hence only one, or possibly two factories could be made in one day by one person.

The results obtained by factory inspection are given elsewhere in this report. In making market milk inspections the various men visited a large number of milk plants, examined the quality of the milk received and general condition of utensils used in handling the product; 3281 dairy farms were inspected. On a large per cent of these farms the milk was sold either to a milk dealer or directly to the city trade. On each of these dairy farms inspection was made of barn conditions, cleanliness of cows, milk pails, cans, strainer, etc.; also the method of caring for the milk until it was delivered to the consumer or factory.

In making factory and market milk inspection the men have examined a large number of samples of milk as to cleanliness by means of the sediment tester, besides making butter fat determinations of these same lots of milk.

A large number of examinations have been made of milk cans used by the dairymen in delivering their product to the factory.

The men have been called upon to judge exhibits of dairy products entered at county or state conventions and the state fair.

That progress has been made in each territory is evident from the reports received from the men in the field. J. D. Cannon reports that the licensing law has worked wonders in the improvement of cheese factories and creameries, and as a result of market milk inspections and the use of the sediment tests at cheese factories, the quality of the milk has improved. S. B. Cook refers to the number of new factories that have been erected in his territory, thus doing away with poorly constructed plants erected when the dairy industry had its beginning. S. J. Dufner calls attention to the cream buying stations and urges more drastic methods in the regulation of these institutions. He says: "These stations are operated at extra expense to the dairy industry and they are conducive to poor quality. There is a marked improvement in factory and barn conditions and the dairymen are producing a better grade of cream." F. S. Hanson, who succeeded J. B. Linzmeyer, could not make a comparison of present and past conditions, but he is confident that dairy conditions are improving, and he also urges a more thorough inspection of the makers in charge of the factories handling dairy products. A clean cheese or butter maker has a marked influence upon every dairyman who delivers milk to his factory. J. Lehnher says: "Cheese makers do not take the pride that they should to make the factory attractive, hence I feel that something should be done to create an interest in beautifying factory surroundings. A law should also be enacted compelling dairymen who sell milk to erect a suitable place for storing it." F. Marty: "Remarkable progress has been obtained with special reference to interior finishing of the make rooms, painting and whitewashing of these rooms and the curing rooms as well. Changes have been made in the location of the whey separator and the whey holding tank, and at many factories a sewage disposal plant has been installed." R. B. Southard: "A large majority of the cheese factories and creameries are in good, clean condition, and the makers clean about their work. I find that there are very few rusty or open-seamed cans used." J. Van Duser: "The cheese makers and butter makers have taken a new interest in their work since they have been placed under the license system. There is also a marked improvement in the general condition of the cheese and butter factories."

PROGRESS OF THE DAIRY INDUSTRY

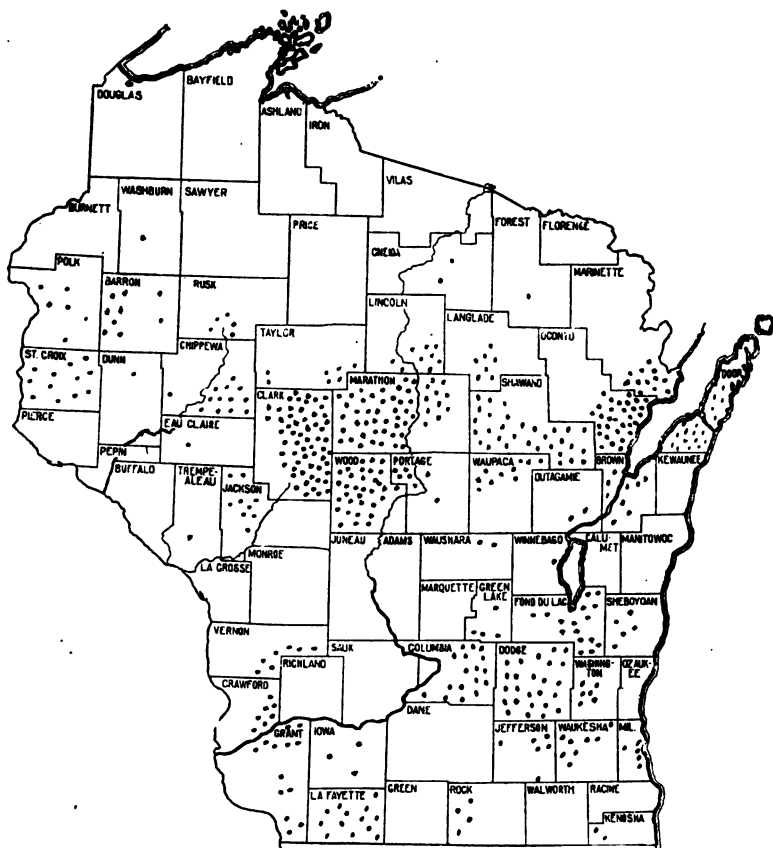
Dodge county was conceded in 1909 as having reached a high state of production, but has increased from 14,647,758 pounds of cheese for that year to 23,061,528 for the year 1915, and stands as the leading cheese producing county. Sheboygan county is second with 21,363,448 pounds, and Manitowoc county third with 15,587,573 pounds.



SHADED COUNTIES INDICATE AN INCREASE IN CHEESE PRODUCTION, 1909-1915

The north central cheese producing section, comprising the counties of Wood, Clark, Marathon, Lincoln and Chippewa has increased in cheese production from 7,724,538 pounds to 28,169,062 pounds for the six year period, 1909 to 1915. Clark county alone increased from 3,643,967 to 10,708,213 pounds, and Marathon from 2,472,174 to 10,579,553 pounds.

The figures for 1909 credited to the territory tributary to the western shores of Lake Winnebago and Green Bay showed a rapid increase over 1905, with Outagamie county in the lead, while in 1915 as compared with 1909 the increase has moved northward to the counties of Shawano, Oconto and Marinette.



INCREASE IN CHEESE FACTORIES BY COUNTIES, 1910-1916

There was an increase in cheese production in all except sixteen counties, eight of these being in the extreme north. The decrease in Kenosha and Racine counties was due to the demand in this territory for market milk. The southwest territory and the lake shore region has seen a goodly increase in number of factories in operation. The northwest territory comprising the counties of St. Croix, Polk and Barron has twenty-seven new cheese factories, while the north central territory has more than doubled in the number of

factories, namely 128 in 1910 for the counties of Clark, Marathon and Wood and 273 in 1916 with nearly a like increase for Shawano. Oconto, Marinette and Door, namely 120 in 1910 and 211 factories in 1916.



DECREASE IN CHEESE FACTORIES BY COUNTIES, 1910-1916

The production of butter in factories was reported in 1909 to be 105,307,356 pounds and in 1915, 124,636,071 pounds, an increase of nearly twenty million pounds. The total value of the production was \$34,744,774.51. The butter factories of Dane, Grant, Jefferson and Sauk counties reported an output of more than five million pounds of butter each. The counties of Barron, Dunn, Fond du Lac, Monroe, Trempealeau and Vernon exceeded four million pounds each. The entire western and northwestern portion has had

an increase in butter production, but a slight decrease in the number of factories in operation. The north central territory has gradually changed from the manufacture of butter to the making of cheese.

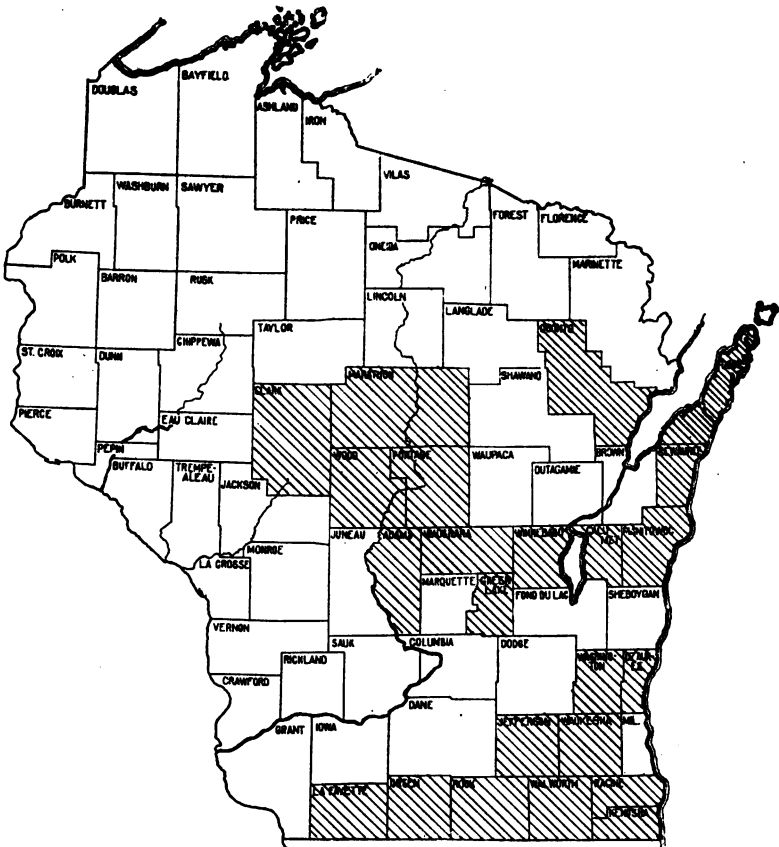


SHADED PORTION SHOWS INCREASE IN BUTTER PRODUCTION BY COUNTIES,
1909-1915

The entire southern portion, from LaFayette county east, and including Jefferson and Waukesha counties, has decreased in butter production largely because the producers have felt that the selling of milk to cheese factories, condenseries and market milk plants nets greater returns than those afforded by the butter factories.

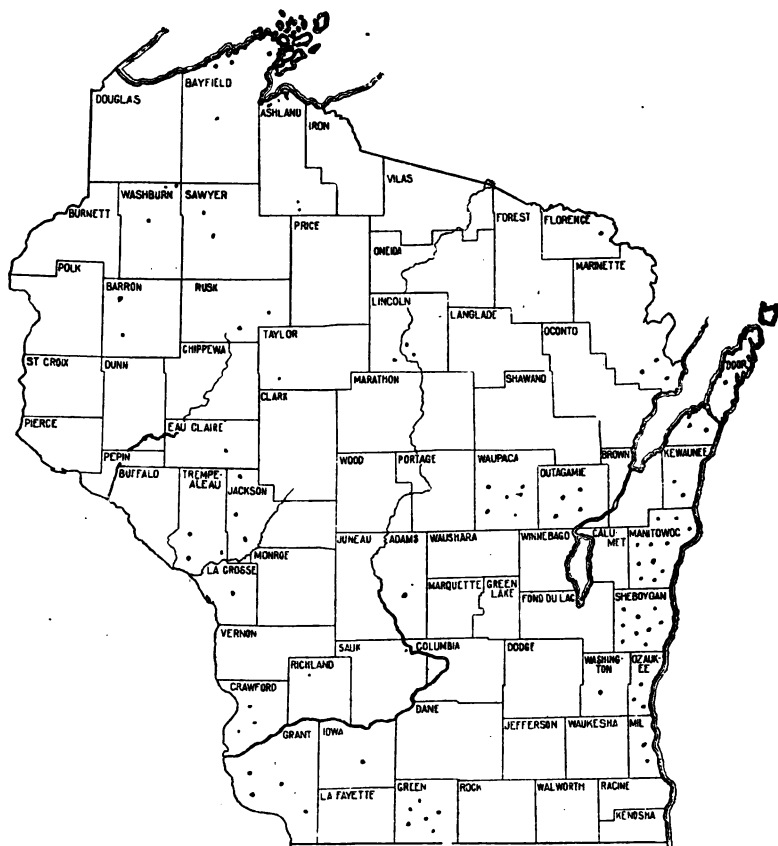
The total increase in pounds of butter made was due to the large increase in cream production in those sections where butter production prevails. Barron county as an example manufactured

2,650,615 pounds of butter in 1909 and 4,785,184 pounds in 1915. Dunn county increased its production from 2,580,444 pounds to 4,299,272 pounds, with a one-third increase for Monroe and Grant counties from 3,532,308 pounds to 5,122,722 pounds.

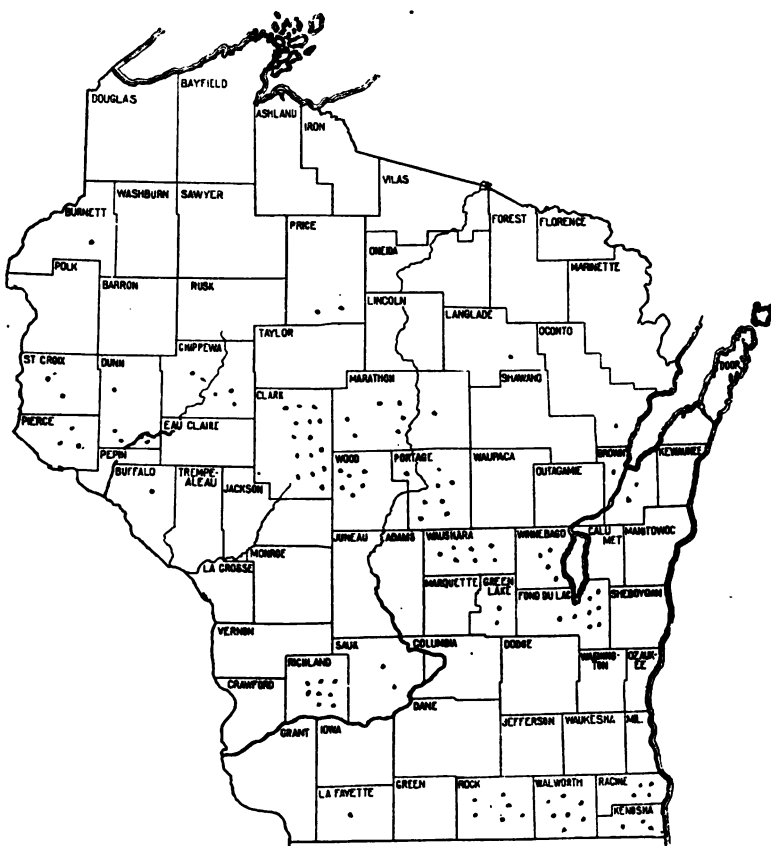


SHADED COUNTIES INDICATE DECREASE IN BUTTER PRODUCTION, 1909-1915

In the newly developed portions of the north, the creamery industry has enjoyed a healthy growth. The butter production in 1909 for all the counties located north of the counties of Polk, Barron, Chippewa, Clark, Marathon, Shawano, Oconto and Marinette was 2,390,240 pounds and in 1915, 5,751,355 pounds. This increase in butter production is an indication of what the dairy industry is amounting to in northern Wisconsin.



INCREASE IN BUTTER FACTORIES BY COUNTIES, 1910-1916



DECREASE IN BUTTER FACTORIES BY COUNTIES, 1910-1916

THE CONDENSING INDUSTRY

The growth of milk condenseries in this state since 1909 has been very rapid. This is also true with reference to market milk production for the cities of Chicago and Milwaukee. All of these plants furnish a market for the dairymen interested in the selling of the entire output of the dairy, rather than utilizing skim milk and whey as feed for hogs and calves. In 1909 the condenseries alone bought 229,958,000 pounds of milk, and in 1915, 396,607,532 pounds. These institutions naturally have had a marked effect on the number of creameries and cheese factories in operation in the territory where they are located. In these counties butter and cheese production has not increased in the same ratio as where there are not condenseries. This, in part, accounts for the decrease in cheese factories in the counties of Green, Richland and Calumet, and only a small increase in the number of pounds of cheese made. In these three counties in 1909 there was made 24,428,786 pounds of cheese and in 1915, 25,437,707 pounds. Compare this increase with that of Dodge county, where only one condensery is located.

Patrons of condensed milk plants seem to be interested in greater milk production and they are also willing to make improvements in dairy barns and in the erection of milk houses demanded by these institutions. They are also willing to be educated along lines of better and more sanitary milk.

Respectfully submitted,

C. E. LEE,

Assistant Commissioner and Dairy Specialist.

**REPORT OF E. L. ADERHOLD, ASSISTANT DAIRY AND FOOD
COMMISSIONER**

HONORABLE GEORGE J. WEIGLE,
Dairy and Food Commissioner.

Sir: Following is a report of the work done by me as assistant dairy and food commissioner for the fiscal year ending June 30, 1917:

LICENSE LAW

At the beginning of the fiscal year, the first inspection of factories under the new butter and cheese factory license law was in progress. In my territory that inspection was completed by the middle of July, when the second inspection was begun. In a few cases more than two inspections were necessary. This work lasted till into December.

The territory consigned to me consists of Winnebago, Green Lake, Fond du Lac and Dodge counties, in which about three hundred forty factories are located.

FACTORY IMPROVEMENTS

The improvements obtained by virtue of the said license law are of a comprehensive nature. Dark rooms were made brighter; defective walls, ceilings and floors were repaired; fixtures of undressed lumber that had never seen paint were replaced by those of dressed lumber, and painted. A very considerable amount of painting and enameling was done on the interior of buildings and on castings, rods, pipes, etc. Boilers and gasoline engines were removed or partitioned away from make rooms. At some factories an excellent system of ventilation was installed. Many underground tile drains were laid and others were extended. A number of blind wells were constructed, and in some cases concrete driveways were built at the intake and whey tank.

A wonderful improvement was effected in the equipments for whey cream production. Tinned metal vats have replaced those of less suitable material and suitable rooms were provided for such vats. The sanitary type of piping was installed in place of common black or galvanized iron piping, etc.

Some forty factories in my territory that were in the worst class have been so extensively overhauled as to place them in the best class. A large number of the factories in my territory are in fair to good condition, although there are many improvements of minor character that can be made.

However, there are cases where whey is daily spilled on the soil near the factory, causing foul odors, and there are a number of makers who fail to provide efficient fly protection in summer.

DODGE COUNTY FACTORIES

The problem of enforcing the license regulations in Dodge county was somewhat complicated. That county has some 160 cheese factories, better than a hundred of which are owned by farmer companies, operated by a second party and the cheese maker constitutes the third party. Thus the responsibility of repairs, upkeep, etc., is divided, for which reason improvements in factory sanitation had not kept pace with that of some other sections. However, stockholders and operators responded so nobly that the results obtained there can be appreciated only by those familiar with their factory conditions before and after the license law was in force. Cooperation between owner, operator and maker had not been of the best. With a view of improving it, I caused a meeting to be called at Beaver Dam in December, which was attended by fully 170 farmers, makers and operators. The respective duties of the owner, operator and maker were discussed after which I spoke of the assistance which may be rendered them by the Dairy and Food Department.

At the time that meeting was held, the good results of the license law were manifest and a resolution was passed endorsing that law as well as my efforts in behalf of cheese factory improvements in that county.

MEETINGS

During the year I made addresses at a number of dairy conventions of various kinds and turned down some invitations to make addresses because of pressure of other duties.

CITY MILK

About four of the winter months of my time was devoted to city milk work. This consisted chiefly of purchasing samples of milk and cream from venders, testing the same for adulteration and making sediment tests of the milk samples. This was followed by sanitary inspection of milk plants, utensils and of dairies which furnish milk or cream to the city trade. In this work many faulty conditions were found and the remedy pointed out.

The conditions of all the dairies about the larger cities were reported in a summarized form which was published in the local press. While no names were given in those reports, such publicity woke up the consumers to the fact that some of the milk which came to their city was unclean and unsafe to use. A great wave of sentiment was created for a better milk supply and for the need of regulation in insuring that result. Meetings were held in those cities and ways and means for improving the situation were discussed.

MILK TESTING

Comparatively little milk testing is done at Swiss and Brick factories. At many of them no testing at all is done. Numerous calls

come to our department from those factorymen asking that an inspector be sent to test out their milk, as they believe some of it is adulterated. I believe our department has been too liberal in responding to such requests for in many such cases no adulteration was found and no indication of adulteration existed. Some of those factorymen find it more convenient to have an inspector do their testing for them, when they ought to do it themselves.

On account of the expense involved in sending an inspector to a factory to test milk, I believe such calls should not be responded to unless some evidence of adulteration is furnished. Such policy would give our inspectors more time for other work and would tend to induce those cheese makers to use the Babcock test more frequently than they have been using it.

MOISTURE STANDARD

During the past six or eight years forces have been at work which tend to ruin the splendid reputation Wisconsin had on her American cheese. Certain big concerns, apparently desirous of handling large quantities of our cheese, let down the bars as to quality. Other dealers had to follow suit or discontinue their business. Many cheese makers took advantage of the situation and instead of making a firm bodied cheese from a matured curd they shortened their days work by several hours, put an immature curd to press and more and more loaded the cheese with moisture. There is also much recklessness as regards the appearance of cheese.

During the past year hundreds of factories were turning out a product that couldn't hold a candle to "the cheese that made Wisconsin famous" and some cheese makers boasted that they were able to incorporate forty-five per cent, or more, of water in their cheese. The situation called for a moisture standard on American cheese and at the general behest of dealers and makers, the legislature of 1917 created a maximum legal moisture standard of forty per cent.

I spent the better part of the month of June at Sheboygan county cheese warehouses, observing the condition of cheese as it arrived from the factories and testing about two hundred samples for moisture. From that experience I am satisfied that hundreds of factorymen are making more or less cheese that contains water in excess of forty per cent. Although the moisture law is in effect but a few weeks, improvement in the cheese produced at a number of factories is already apparent.

While cheese makers generally are willing to be governed by the moisture law, nearly all of them are in the dark as regards the water content of their cheese, and it appears to me that our inspectors will need to devote considerable time to the making of moisture tests on cheese.

Respectfully submitted,

E. L. ADERHOLD,
Assistant Commissioner.

REPORT OF FRED P. DOWNING, CHIEF INSPECTOR OF WEIGHTS AND MEASURES.

HONORABLE GEORGE J. WEIGLE,

*Dairy and Food Commissioner, Ex Officio State Superintendent
of Weights and Measures.*

Sir: I hereby submit a report of the work done by both the state and city departments of weights and measures for the year ending June 30, 1917.

HISTORY

It is interesting to compare weights and measures conditions of today with those existing prior to the enactment of the present Wisconsin law relating to weights and measures. Weights and measures statutes were in existence long before Wisconsin was admitted to statehood. The territory of Michigan originally included what is now Wisconsin. In 1820 the Michigan territorial legislature enacted statutes on weights and measures, prescribing standards identical with those in use in the state of New York. In 1824 clerks of the county courts were made ex officio sealers of weights and measures. When the territory of Wisconsin was created, an act was passed by the Wisconsin territorial legislature of 1839 adopting the New York standards of weights and measures, making the state treasurer the state sealer of weights and measures, and the county treasurers ex officio sealers of weights and measures. Among other provisions this act prescribed legal weights for grains. When Wisconsin was admitted to the Union in 1848, the first state legislature enacted legislation quite similar to that which had been previously on the statute books. Standards were adopted, the state treasurer was made state sealer and the county treasurers the county sealers of weights and measures. Fees were to be charged for testing commercial weighing and measuring appliances, and standard weights per bushel were prescribed.

From time to time additional legislation on weights and measures was passed, but with no machinery for the proper enforcement of the law, weights and measures legislation was not effective. Some of the larger cities, notably Milwaukee, passed local ordinances on weights and measures, creating the office of city sealer of weights and measures and providing funds for the proper enforcement of the ordinances. The publicity given to the work of the city departments, soon brought the state legislature to realize that state legislation was absolutely necessary. As a result the legislature of 1911 enacted Chapter 566, Laws of Wisconsin, which chapter became the groundwork of our present law. This chapter

provided that the dairy and food commissioner should be ex officio state superintendent of weights and measures. It abolished the office of county sealer and created the offices of city and state sealers specifying their powers and duties. It provided standards for berry boxes and milk bottles; it gave the dairy and food commissioner general supervision over all the weighing and measuring appliances in the state, authorizing him to create tolerances and make regulations for the guidance of all sealers. It abolished the collection of fees and provided for the testing of all weighing and measuring appliances in the state at least once annually.

Certain defects in Chapter 566 soon became evident, and when the special session of 1912 was called a few changes were made. Section 1668 of the statutes relating to berry boxes was amended so as to permit of the sale of non-standard berry boxes during the season of 1912 if properly marked to show their true capacity. The standard barrel for potatoes and other vegetables was prescribed to be of the same capacity as the standard barrel for apples and other fruits, and a standard crate for fruits having a capacity of 2352 cubic inches was created.

The legislature of 1913 enacted Chapter 311, Laws of Wisconsin, commonly known as the net weight amendment to the food laws. This act required that all foods in package form be plainly and conspicuously marked on the outside of the package in terms of weight, measure or numerical count.

During the session of 1915 a number of changes were made in the general law relating to weights and measures. Chapter 356 gave the state superintendent of weights and measures the power not simply to prescribe tolerances on weights and measures but to make specifications with which all the measuring appliances in the state must comply. Chapter 152 authorized sealers of weights and measures to inspect and test all weighing and measuring appliances *offered for sale*. In addition it gave these inspectors authority to re-weigh packages put up by dealers for delivery. Chapter 63 made a number of changes in the legal weights of dry commodities. Chapter 443 amended the milk bottle law so as to permit of the use of a special bottle in the sale of pasteurized milk. Chapter 225 prescribed containers of definite capacity from the quart to the bushel for fruits and vegetables. It made the sale of fruits and vegetables in non-standard containers unlawful unless marked to show true capacity. Chapter 95 relieved the department of the arduous work of testing milk and cream test bottles. It placed the manufacturers of Babcock glassware under bond. Chapter 392 prescribed a standard barrel for beer of 31 gallons capacity, thus securing uniformity with the U. S. Revenue laws.

NEEDED LEGISLATION IN WEIGHTS AND MEASURES

It will be observed from the preceding paragraphs that the legislature of Wisconsin has passed a broad, comprehensive statute on

weights and measures. Certain defects in this legislative act have been discovered and remedied from time to time. There still remains, however, considerable remedial legislation on weights and measures which should be considered by future legislatures. This department recommends new legislation along the following lines:

1. The enactment of a statute standardizing the weight of loaves of bread. Bread is now sold by the loaf and not by weight. An investigation made by the state department of weights and measures during the year revealed the necessity for an act of this kind.

2. The enactment of a statute requiring wrapped meats, limburger and brick cheese to be sold by net weight. Instead of requiring the net weight of these commodities to be placed upon the wrapper, the act should provide that the tare weight of the paper should be marked on the package. This marking of the weight on the wrapper would be a guide to the retailer in making his deductions from the gross weight. It has been found that a 140 lb. box of limburger cheese has from 7 to 8 pounds of tin foil and manilla paper wrapped about the individual units of cheese. An investigation of the weight of wrapped meats such as hams and bacon made by weights and measures inspectors shows clearly that the public is paying meat prices for large quantities of wrapping paper. The following tabulation shows the amount of wrapping paper placed by packers around wrapped meats:

Article.	Firm.	Packers' weights.		Actual net weight.		Amt. paper.
		Lbs.	Oz.	Lbs.	Oz.	
Boiled ham...	Reland Packing Co.....	17	2	16	3	15
Ham.....	Geo. A. Hormel & Co.....	11	14	11	8	6
Ham.....	" " " ".....	11	1	10	11	6
Ham.....	" " " ".....	11	7	11	1	6
Ham.....	Reland Packing Co.....	16	14	16	8	6
Ham.....	Interstate Packing Co.....	19		18	9	7
Bacon.....	" " " ".....	7	9	7	3	6
Bacon.....	Swift & Co.....	5	10	5	5	5
Bacon.....	Plankinton Packing Co.....	8	14	8	9	5
Ham.....	" " " ".....	15	13	15	8	5

3. The enactment of a statute requiring the marking of the weight or measure on packages put up by the retailer. This piece of legislation is demanded by the purchasing public. It will promote fair dealing. A number of Wisconsin cities have already passed sales slip ordinances. Such legislation should not apply to cash sales where the weighing or measuring is done in the presence of the buyer. In order not to make the act too burdensome on the retailer, in lieu of marking the weight or measure on the package or sales slip, the price per pound of the article sold together with the total cost of the package sold could be placed on the slip. This would involve merely the additional labor on the part of the retailer of putting down the price per pound he is charging his customers.

4. The enactment of a statute authorizing the state superintendent of weights and measures to extend the jurisdiction of city sealers to contiguous territory. The passage of such a bill would enable the department to complete the testing of weighing and measuring appliances at least once a year as prescribed by law. The work could be done at less cost than heretofore and it would act as an incentive to the city sealer to do better work in his own territory. Many city sealers in Wisconsin today devote only a portion of their time to weights and measures duties. The more competent sealers could be selected to do work outside of the city limits for which work they would receive pay from the state for time rendered. It is believed that twelve city sealers devoting three months of their service to the state would enable the state department to completely cover its territory in the course of the year with traveling expenses considerably reduced. By reducing the size of the districts now covered by state sealers, more effective work can be done by these men at a considerable reduction in expense. It is estimated that an appropriation of \$6,000 for this work would be sufficient.

WEIGHTS AND MEASURES INSPECTIONS IN CHEESE FACTORIES AND CREAMERIES

Weights and measures inspection in cheese factories, creameries and condenseries is done by creamery and cheese factory inspectors. These men have been equipped with the proper appliances for performing this additional duty. The weights and measures department receives a greater number of calls from operators of creameries and cheese factories to have scales tested than from any other industry in the state. Creamery scales are exposed to the influence of a moist atmosphere and rust readily. Moisture and salt are extremely hard on scales and it is very essential that factory scales be tested at frequent intervals.

The need of weights and measures work in factories, however, should not be underestimated. The importance of this work may be shown by citing losses reported by inspectors of the department. In a cheese factory in LaFayette county the cheese factory inspector found an intake scale with an error in leverage of one pound on one hundred. A two hundred pound weight used with this scale was three pounds light. The inspector figured that the losses to the factory through the use of the defective weights and scale amounted to 152 pounds of milk daily. For the year the loss to the factory would be over 55,000 pounds of milk. At \$2.00 per hundred the loss to the factory would be over \$1,100. The above instance is not an unusual occurrence. It simply shows the necessity of frequent tests of factory scales. Many cheese factories have but one scale which is used both in the weighing of the cheese in the cheese room and in the weighing of milk brought to the factory. In moving the scales from one place to the other the goose neck beam is bent inward. Numerous instances are on record where this shift-

ing of the scale from one place to another has resulted in serious losses. Operators of creameries and cheese factories are troubled with many complaints from farmers who have purchased defective secondhand scales or cheap mail order house scales. It has been impossible for this department to make more than occasional tests of farmers' scales.

Again spring cream scales used on cream gatherers' wagons are another constant source of error. A spring scale is the only type of scale that can be readily hung from a wagon. These scales should be tested at least once a year, preferably twice. The extremely large percentage of errors in factory scales is shown in the report of one of the dairy inspectors. Of 518 appliances tested during the year the inspector adjusted 154 or 29.7 per cent and condemned 48 or 9.2 per cent. Weights and measures conditions in the cheese factories and creameries of the state have improved greatly during the past few years. The old style, sluggish and inaccurate moisture and cream test scales have been supplanted by the more modern and accurate balances of the present day. Nearly all factories are now equipped with standard sealed Babcock glassware.

The enactment of a law prohibiting the incorporation of more than 40 per cent of moisture in cheese has made it necessary for many of the cheese factories to provide themselves with means for determining the amount of moisture in cheese. It became necessary to work out a new type of moisture scale designed especially for this purpose. The department recommends the use of moisture scales provided with a double beam, the upper graduated in 2/10 per cent divisions and reading to 20 per cent, and the lower beam graduated in $\frac{1}{2}$ per cent divisions and reading to 30 per cent.

FIELD WORK

During the year the department tested 118,060 weighing and measuring appliances in 11,782 places of business. Twenty-two thousand seven hundred and twenty-nine packages were either reweighed or remeasured in 2,995 stores. Of this number 5,300 were found slightly deficient in weight or measure. In most instances the shortages were small and the packages were refilled in the presence of the inspectors, but in a few cases it was found necessary to start legal action against the violators.

A complete summary of the field work of the state department of weights and measures is given in Table No. 1. This table shows the different classes of weighing and measuring appliances which have been found correct and incorrect. When appliances have been condemned for repairs the owner is given an opportunity to correct the defects following which a retest is made by the inspector. Appliances that have been condemned must be discarded. The appliances listed under the column headed "adjusted" had defects which were remedied by inspectors of this department. Such appliances, following adjustment by the inspector, were sealed and are included in the totals given under the column headed "sealed".

TABLE NO. 1
SUMMARY OF FIELD INSPECTIONS MADE BY INSPECTORS OF STATE WEIGHTS AND MEASURES DEPARTMENT,
JULY 1, 1916, TO JUNE 30, 1917.

Instrument	Sealed	Per cent sealed	*Adjusted	Per cent adjusted	Condemned for repairs	Condemned	Per cent condemned for repairs and condemned	Total
Scales:								
Counter.....	4408	94.7	151	3	169	84	5.3	4751
Hopper.....	244	96.6	24	0.6	10	0	4	254
Suspension.....	79	84.9	5	5.4	7	7	15.1	93
Computing.....	3648	94.6	795	20.6	200	9	5.4	3957
Wagon.....	1492	75.6	139	7.9	424	59	25.4	1975
Portable Platform.....	4991	91.6	430	7.4	348	112	8.4	5449
Dormant.....	4749	94.5	57	7.4	45	3	5.5	4775
Spring.....	1245	67.5	73	4	99	500	32.6	1844
Torsion.....	608	94.4	9	5.6	29	7	5.6	644
Beam.....	332	94.3	5	0	6	14	5.7	352
Slot Machine.....	127	59	0	0	2	1	60	5
Family Scales.....	127	59	0	0	111	1	47	238
Miscellaneous.....	723	93	1	4	1	0	4	24
Total Scales.....	(18018)	(88.9)	(1689)	(8.3)	(1447)	(796)	(11.1)	(20261)
Dry Measures.....	99	86.7	0	0	0	16	14	115
Liquid Measures.....	24169	93	23	0.08	1411	2441	14.3	28221
Presc. Graduates.....	2446	85.7	0	0	9	146	7	2891
Automatic Pumps.....	2848	91.9	466	15	270	29	9.1	3147
Linear Measures.....	6202	97	245	2	85	83	3	6370
Weights.....	51025	89	1180	2	4969	1207	11	57201
Milk Test Bottles.....	0	0	0	0	0	359	100	359
Cream Test Bottles.....	0	0	0	0	0	83	100	83
Pipettes.....	0	0	0	0	0	2	100	2
Totals.....	104,507	88.5	3,602	3	8,191	5,862	11.5	118,060

* The appliances adjusted have been sealed and in figuring totals are included in the "Sealed" column.

OFFICE WORK

Since the passage of Chapter. 95, Laws of 1915, much of the routine work of testing appliances in the office has been eliminated. This chapter placed the manufacturer of Babcock milk and cream test bottles under a thousand dollar bond. The failure of manufacturers to make Babcock glassware in compliance with the Wisconsin law and the regulations issued by the state superintendent of weights and measures would result in the department starting action in the courts for forfeiture of said bond. Thousands of milk and cream test bottles which were formerly tested in this office are now sealed by the manufacturer who is required to guarantee their accuracy. Only occasional tests are now made of Babcock glassware to see whether the law is being complied with.

During the past year 2,182 weighing and measuring appliances have been tested in the office of weights and measures. The various kinds of instruments tested will be found in Table No. 2. The work of calibrating city and state standards requires slow and careful manipulation of the standard office balances. The cream test scales and the milk scales tested are largely new appliances that have been sent direct to this office from the manufacturer at the request of the purchaser.

TABLE NO. 2

OFFICE TESTS OF STATE DEPARTMENT OF WEIGHTS AND MEASURES
JULY 1, 1916, TO JUNE 30, 1917.

Instrument	Sealed	Per cent Sealed	*Adjusted	Per cent Adjusted	Condemned for Repairs	Condemned	Per cent condemned for Repairs and Condemned	Total
Cream test scales	155	89.1	5	2.8	19	.....	10.9	174
Milk spring scales	448	98.7	.....	.....	6	.....	1.3	452
Weights	341	95.8	.....	.....	.....	15	4.2	356
Cream test bottles	67	26.1	.....	.....	.....	189	73.9	256
Milk test bottles	256	58.1	.....	.....	.....	200	43.9	456
Milk pipettes	4	36.2	.....	.....	.....	7	63.8	11
Moisture scales	9	75	.....	.....	3	.....	25	12
Postal scales	22	100	1	4.5	.....	.....	.....	22
City standards	163	100	.....	.....	.....	.....	.....	163
State standards	261	100	.....	.....	.....	.....	.....	261
Miscellaneous	18	94.9	.....	.....	1	.....	5.1	19
Total	1,742	79.8	6	.3	29	411	20.2	2,182

ADDRESSES

The chief lines of work of the weights and measures department may be broadly classified under the three headings: mechanical, inspectional and regulative. In addition to the above the weights and measures department also carries on an educational campaign.

Through publicity the public is instructed how to buy intelligently and how to avoid the numerous pitfalls that beset the paths of unwary purchasers. This information is conveyed to the public through the distribution of literature and through the delivery of public addresses. During the past year 12 addresses on various phases of weights and measures work were delivered in different parts of the state, under such headings as: "How to Buy," "Weights and Measures Legislation as a Factor in Reducing the High Cost of Living," "Needed Legislation in Weights and Measures," "Standard Weight of Bread," "Investigation of Track Scales," "The Work of the Wisconsin Department of Weights and Measures". It is the belief of the department that such talks have brought the public to appreciate the necessity of weights and measures work.

FALSE WEIGHTS AND MEASURES

During the past year the department of weights and measures has devoted considerable time to the testing of 8 and 10 gallon milk and cream cans in condenseries and milk depots. In most of the cooperative creameries milk is sold by weight and the cans are used simply as containers. In condenseries and milk depots cream, milk and condensed milk are sold by measure in 8 and 10 gallon cans. In certain instances it was found that manufacturers were shipping new cans into the state that were short in measure. One dealer for instance purchased 500 new cans that were found to be uniformly one pint short. It was later discovered that this was not an intentional error on the part of the manufacturer but was due to carelessness in the factory. The rough treatment given milk cans in shipping has the tendency to shorten their capacity materially. These cans are placed one on top of the other in shipping, and the rough handling they receive has a tendency to pound the bottoms upward. In one condensery of Wisconsin 1100 cans were tested. Of this number 407 were condemned by the inspector, the average shortage per can amounting to 21 fluid ounces. The entire shortage on the 407 cans would be over 66 gallons. The minimum shortage amounted to one-half pint and the maximum one-half gallon.

With 18 per cent cream selling in the neighborhood of 75¢ per gallon and condensed milk at approximately 55¢ per gallon, it can readily be seen that serious losses have resulted through the shortages that were found to exist.

In the year 1915 the Wisconsin legislature amended subsection 2 of section 1661 of the laws of Wisconsin relating to weights and measures, granting sealers of weights and measures the power to inspect and test all weighing or measuring devices *kept, offered or exposed for sale or sold* in the state. This is one of the best pieces of weights and measures legislation ever enacted. To show its importance the following case may be cited. Early in the year 1916, the city sealer of Green Bay, Mr. John M. Kelliher, discovered a



DEFECTIVE WORKMANSHIP

The figures indicating each 5 lb. graduation mark on the upper beam have, after passing the 50 lb. mark, been set ahead so that an error of 5 lbs. is easily made. In the photograph the 100 lb. mark, as indicated by arrow, is placed directly below the 95 lb. graduation.

thousand pound portable platform scale, equipped with a false beam, which was being offered for sale by one of the leading hardware dealers of Green Bay. The attention of the state department of weights and measures was called to the defect in this particular make of scale, and the investigation which followed showed that hardware dealers in Milwaukee and other places in the state had placed orders for a large number of these defective scales. Jobbing houses were totally unaware of the defect in these scales until their attention was called to this matter by inspectors of the department. The accompanying illustration under the caption "Defective Workmanship" clearly shows the defect in this beam. The upper beam of this scale is graduated to one hundred pounds in one half pound graduations. Each five pound graduation is marked with a star. The figures are supposed to have been placed directly below the stars. It will be noted, however, that after passing the 50 pound mark, the figures indicating these five pound graduations have been set ahead so that an error of five pounds is easily made in reading. In the photograph the hundred pound mark as indicated by the arrow is placed directly below the 95 pound graduation. The correct reading of the upper poise as shown in the diagram is not 104 pounds as one would naturally suppose but 99 pounds. It is needless to say that the sale of this scale in Wisconsin was prohibited. Only a few of these defective scales had been sold by the jobbing houses prior to the discovery of the error mentioned above.

COMMENTS ON THE WEIGHTS AND MEASURES CONDITIONS IN THE VARIOUS
CITIES OF WISCONSIN EMPLOYING CITY SEALERS OF
WEIGHTS AND MEASURES

City sealers of Wisconsin on the whole have during the past year made a most admirable showing. The majority of these officials are faithful, painstaking, and conscientious in their work. They have been of great assistance to the state department in securing uniformity in the enforcement of the weights and measures laws and regulations of the state. Under the terms of the state law all cities of Wisconsin having a population in excess of 5,000 must appoint city sealers of weights and measures. There are thirty-six such cities in Wisconsin now employing local sealers. In some of these cities the sealers have received the support and cooperation of the municipal officers. In others the sealer has been working under a decided disadvantage. In one or two instances the mayor and other city officials have absolutely been hostile to the movement. It is needless to say that in such cases the best of work on the part of the local official cannot be expected. Many Wisconsin cities pay the weights and measures official a ridiculously low salary; so low in fact that the official can devote only a small portion of his time to the duties of the office. In such cases the work often suffers. It is indeed surprising to see in many instances such an

excellent showing on the part of the local official even in the fact of such adverse circumstances.

During the past year city sealers of Wisconsin tested 115,464 weighing and measuring appliances. Of this number 95.3 per cent were found correct and were sealed, 31,512 appliances were adjusted, 2,140 were condemned for repairs and 3,333 were condemned outright. In the summary of tests made by city sealers of weights and measures for the year ending June 30, 1917, it will be noted that the per cent of appliances condemned for repairs and condemned outright varies from .2 of 1 per cent in the city of Manitowoc to 22 per cent in the city of Oconto, the average for the entire state being 4.7 per cent. It can be clearly shown through statistics that the general wear and tear on weighing and measuring appliances annually throws from 4 to 5 per cent of such appliances outside of the tolerances issued by the state superintendent of weights and measures.

City sealers of weights and measures in Wisconsin have tested approximately one-half of the total number of 233,524 weighing and measuring appliances examined during the past year. In cities of less than 5,000 inhabitants where the testing is done by the state department of weights and measures, 118,060 appliances were tested during the year of which number 88.5 per cent were found correct and were sealed; 8,191 appliances were condemned for repairs and 5,362 were condemned outright, making a total of 11.5 per cent of the total number of appliances tested which were either condemned for repairs or condemned outright. The higher percentage shown in the smaller cities is largely due to the fact that the state has been unable to complete the inspectional work within the required time of one year. A longer interval occurring between tests, more appliances naturally become defective.

Table No. 3 given below contains a summary of the tests made by city sealers from July 1, 1916, to June 30, 1917. It will be noted that the city of Milwaukee tested more than one-half of the total number of appliances inspected. The report does not include such work as was done by the city sealers of Fond du Lac, Beaver Dam and South Milwaukee. The city sealer of Fond du Lac resigned his position in June, 1916, and submitted no report. The city sealers of Beaver Dam and South Milwaukee also failed to submit reports to this department as required by law. They are, therefore, given no credit for the amount of work performed.

TABLE NO. 3

SUMMARY OF TESTS OF WEIGHING AND MEASURING APPLIANCES MADE
BY CITY SEALERS FROM JULY 1, 1916, TO JUNE 30, 1917.

Cities	Sealed	Per cent Sealed	*Adjusted	Per cent Adjusted	Condemned for Repairs	Condemned	Per cent con- demned for Repairs and Condemned	Total
Antigo.....	619	97.9	132	20.8	6	7	2.1	634
Appleton.....	1618	94.2	142	8.3	64	28	5.4	1710
Ashland.....	1048	86.2	108	8.8	44	124	13.8	1216
Baraboo.....	1332	95.4	43	3.1	12	52	4.6	1397
Beloit.....	1608	94.3	81	4.7	14	86	5.8	1708
Chippewa Falls.....	475	96.0	47	9.6	14	1	3.1	490
Eau Claire.....	982	86.8	220	10.6	118	31	13.2	1131
Grand Rapids.....	640	93.3	111	16.1	3	43	6.7	686
Green Bay.....	4574	93.1	398	8.1	179	162	6.9	4915
Janesville.....	1789	99.2	20	1.1	6	10	.8	1805
Kenosha.....	1529	90.2	40	2.3	41	124	9.8	1694
La Crosse.....	1822	93.6	66	3.3	.....	123	6.4	1945
Madison.....	4221	96.2	190	4.3	35	129	3.8	4385
Manitowoc.....	1219	99.8	83	6.7	.....	2	.2	1221
Marinette.....	1311	88.9	74	5.5	20	143	11.1	1474
Marshfield.....	1023	98.5	97	9.3	8	7	.7	1033
Menasha.....	268	94.7	78	27.5	1	14	5.3	283
Menomonie.....	681	97.3	22	3.1	16	3	2.7	700
Merrill.....	539	92.9	23	4.4	3	38	7.1	580
Milwaukee.....	58365	96.7	199	.....	981	987	3.3	60333
Neenah.....	735	97.7	12	1.5	1	17	2.3	753
Oconto.....	138	78	25	14	19	19	22	176
Oshkosh.....	2351	92.5	105	4	83	114	7.5	2548
Portage.....	1077	96.5	.....	.....	.....	39	3.4	1116
Racine.....	4173	94.8	381	7.5	49	183	5.2	4495
Rhineland.....	665	88.6	95	12.6	16	70	11.4	751
Sheboygan.....	3218	89.9	79	2.2	250	111	10.1	3579
Stevens Point.....	875	95.9	57	6.2	13	24	4.1	912
Superior.....	4678	95.9	276	5.6	49	146	4.1	4873
Waierstown.....	2311	92.1	250	9.9	67	129	7.9	2507
Waukesha.....	162	94.2	.....	.....	1	9	5.8	172
Wausau.....	2521	97.1	87	33.5	15	58	2.9	2594
West Allis.....	1423	82.1	21	1.2	12	300	17.9	1735
Totals	109,991	95.3	3,512	3	2,140	3,333	4.7	115,464

* Does not include tests made by city sealers of Fond du Lac, Beaver Dam, and South Milwaukee.

* Appliances adjusted have been sealed and in figuring totals are included in the "Sealed" column.

Not only does the city sealer of weights and measures inspect and test the weighing and measuring appliances which are in commercial use in his territory, but he is also required to see that these appliances are used correctly and to see that the state law and local ordinances on weights and measures are enforced. He is required among other things to check up dealers on the weight of loads of coal, to reweigh packages of meats and groceries in the retail stores of each city, and to test the capacity of berry boxes, milk bottles and numerous other containers for food stuffs. The summary by cities of the results of such inspection for the past year is given in Table No. 4.

TABLE NO. 4

SUMMARY OF RESULTS OF TRY-OUTS MADE IN ESTABLISHMENTS INSPECTED BY CITY SEALERS FROM JULY 1, 1916, TO JUNE 30, 1917.

City	Establishments Inspected				Containers tested for Capacity and Compliance with Specifications	
	Number visits	Number Tests	Number Packages short	Number packages misbranded as to weight, measure or count	Number Correct	Number Incorrect
Antigo.....	38	1,464			17	
Appleton.....	213	1,002	50		632	16
Ashland.....	845	4,011	278	127	1,562	257
Baraboo.....					15	1
Beloit.....	532	1,783	169	51	685	21
Chippewa Falls..	125	460	27	3	84	3
Eau Claire.....	76	236	19		24	1
Grand Rapids....	1,425	985	39	125	1,256	124
Green Bay.....	333	3,451	566	549	243	10
Janesville.....		57	9		31	
Kenosha.....	103	673	4		456	
La Crosse.....	155	467	2			
Madison.....	413	1,422	449	205	284	42
Manitowoc.....	71				196	
Marinette.....	88	655	64	85	352	45
Marshfield.....	47	121	14	25	11	1
Menasha.....	180	506	1		206	
Menomonie.....	410	660			2,505	
Merrill.....	31	180			802	
Milwaukee.....	1,653	9,620	695	1,975	30,282	36,287
Neenah.....	860	6,740	55	5	1,932	8
Oconto.....	3	18	16			
Oshkosh.....	76	207	14		312	6
Portage.....	676	5,656	122		640	8
Racine.....	1,029	5,062	1,317	1,059	1,623	33
Rhineland.....	225	1,952	178		1,254	5
Sheboygan.....	473	1,575	486	2	185	10
Stevens Point...	1,398	2,327	59		3,788	144
Superior.....	966	3,289	180	197	4,233	224
Watertown.....	937	2,499	119	120	399	44
Waukesha.....	20	60	1			
Wausau.....	959	1,719	90		371	
West Allis.....	10	13	6	1	38	62
Totals.....	14,418	58,873	5,020	4,529	54,398	37,302

It will be observed that there is a wide variation in the amount of work of this kind that has been done by city officials. In some instances inspectors have devoted a large share of their time to this most important phase of work. In other instances this work has been neglected. An inspector of weights and measures must bear in mind that he is not merely a sealer required simply to test and inspect the weighing and measuring appliances in his territory. It is his duty to see that such appliances are used correctly and he can only do this by answering complaints received from citizens of the town and by making repeated visits to the stores in his territory to reweigh or remeasure packages of food stuffs and other

commodities which have been put up for delivery. This work has a tendency to make dealers more careful and where it is carried out systematically fewer violations of the weights and measures act will be found.

Containers tested for capacity and compliance with specifications shown in this table are of a great number of varieties. They include for instance tests on standard apple and potato barrels, cranberry barrels, milk and cream bottles, paper buckets, prescription bottles, etc. Under establishments inspected are included such places of business as groceries, meat markets, bakeries, confectioneries, wood, coal and ice dealers, druggists, commission houses, city markets, and other places. It will be observed that during the past year city sealers of weights and measures visited 14,418 places of business and that they reweighed or remeasured 58,873 packages. Of this number 5,020 packages were found short. Tests for capacity were made of 54,398 containers of which number 37,302 were found incorrect. This exceedingly high number is due to the condemning of 29,520 milk bottles in the city of Milwaukee. The compliance of standard containers in the state with the terms of the law is more fairly shown by eliminating the two carloads of milk bottles which were condemned by the city sealer of Milwaukee before the same were used commercially. This being done out of 24,878 containers tested, only 1,065 were found incorrect.

For purposes of comparison Table No. 5 given below showing the total number of weights and measures tested, and the percentages sealed for the years 1915, 1916, and 1917, reveals some interesting facts.

TABLE NO. 5

TABLE SHOWING TOTAL NUMBER OF WEIGHTS AND MEASURES TESTED AND PERCENTAGES SEALED FOR THE YEARS 1915, 1916 AND 1917.

Cities over 5,000	For the year 1915	Per cent sealed	For the year 1916	Per cent sealed	For the year 1917	Per cent sealed
Antigo.....	1,136	94.7	825	97.6	632	97.9
Appleton.....	3,282	87.8	2,345	94.1	1,710	94.6
Ashland.....	1,344	79.5	994	86.7	1,216	88.2
Baraboo.....	731	90.2	1,218	89.4	1,397	95.4
Beloit.....	1,804	87.1	1,772	95.4	1,708	94.2
Chippewa Falls..	*	*	1,182	81.7	490	96.9
Eau Claire.....	1,602	93.8	1,557	89.	1,131	86.8
Fond du Lac.....	2,485	96.6	1,565	95.7	*	*
Grand Rapids.....	853	93.9	780	93.6	686	93.3
Green Bay.....	6,157	92.8	6,218	94.	4,915	93.1
Janesville.....	1,802	95.2	1,991	99.1	1,805	99.2
Kenosha.....	2,559	93.2	1,610	94.7	1,694	90.2
La Crosse.....	2,069	83.7	2,183	96.2	1,945	93.6
Madison.....	4,748	95.6	5,073	94.4	4,385	96.2
Manitowoc.....	1,792	98.8	2,215	99.85	1,221	99.8
Marinette.....	1,048	96.4	1,151	94.8	1,474	88.9
Marshfield.....	1,171	96.	850	94.8	1,038	98.5
Menasha.....	439	96.6	265	98.1	283	94.7
Menomonie.....	575	93.9	618	99.8	700	97.3
Merrill.....	1,173	93.	1,176	93.3	580	92.9
Milwaukee.....	62,061	96.5	65,201	96.7	60,333	96.7
Neenah.....	640	98.1	726	98.3	753	97.7
Oconto.....	272	68.4	38	79.	176	78.
Oshkosh.....	4,239	93.7	4,458	89.2	2,548	92.5
Portage.....	1,070	93.8	1,010	95.1	1,116	96.5
Racine.....	5,668	92.2	5,008	94.3	4,405	94.8
Rhineland.....	977	91.8	871	86.9	751	88.6
Sheboygan.....	3,973	83.8	3,424	89.1	3,579	89.9
S. Milwaukee.....	*	*	379	91.3	*	*
Stevens Point.....	1,427	91.8	1,243	93.4	912	95.9
Superior.....	6,053	92.7	4,92	95.4	4,873	95.9
Watertown.....	2,219	85.9	2,554	89.2	2,507	92.1
Waukesha.....	48	97.9	173	70.5	172	94.2
Wausau.....	2,450	95.	3,026	94.7	2,594	97.1
West Allis.....	*	*	2,155	87.3	1,735	82.1
Total.....	127,867	94.1	131,377	95.	115,464	95.3
Total in places less than 5,000..	142,861	77.1	139,898	85.1	118,060	88.5

*Indicates there is no report for that year.

It will be noted that there has been a gradual increase in the percentage of appliances sealed, which increase has been greatest in cities having a population of less than 5,000 inhabitants. In cities under the jurisdiction of local sealers the per cent of sealed appliances has been raised from 94.1 per cent to 95.3 per cent. These figures show that approximately 5 per cent of the total number of weighing and measuring appliances tested become inaccurate from year to year. In cities of less than 5,000 inhabitants the percentage of appliances sealed has increased from 77.1 per cent in the year 1915 to 88.5 per cent in the year 1917, an increase of over 11 per cent. The total number of appliances tested for the year 1917, both by the city and by the state has fallen materially in numbers from the figures given for the year 1915. This can be

readily explained in the case of state sealers. These inspectors now devote approximately one-third of their time to sanitary and food work and to oil inspection. The number of such inspectors has not been increased; consequently there has been a decided falling off in the total number of tests made for the year. In the year 1915 when over 142,000 inspections were made, the state was not completely covered. During the past year the drop in number of inspections amounts to 24,801 tests. Just why there should be a falling off in the number of inspections made in cities having city sealers is somewhat difficult to explain. This may be brought about by the failure on the part of an inspector to keep a complete record of all appliances tested or by neglect on his part to test all the appliances during the course of the year. At any rate it is a matter which should be considered carefully by the local inspectors.

PROSECUTIONS MADE BY CITY SEALERS

Many minor violations of the weights and measures law arise either through a misunderstanding of the terms of the act or through ignorance on the part of the offender. In such cases compliance with the terms of the act is readily obtained by calling attention to the violation. This department finds that the majority of people engaged in business in the state are law-abiding. In the tabulation showing the summary of results of try-outs made in establishments inspected by city sealers for the year, it will be noticed that these sealers reported 5,020 packages that were found short in weight or measure. In most instances the shortage was slight and the packages were refilled in the presence of the inspector. In this class of offenses might be included the failure of a merchant to allow for the weight of a wooden tray in the sale of lard or of a heavy paper sack in the sale of sugar. In most instances sealers report that merely calling the attention of the tradesman to these offenses followed by an occasional visit of re-inspection has accomplished the desired effect. However, sealers in Wisconsin have been obliged during the past year to institute legal proceedings against some 96 offenders. Of the 96 cases for violations of the weights and measures act which were brought in the state, 86 convictions were obtained. Charges were brought for a variety of causes, chief among which may be mentioned the giving of short weight in groceries, meats, fruits, ice and coal, the use of false scales, and selling over scales which have not been sealed by an authorized sealer of weights and measures in compliance with the law. Table No. 6 shows the cities in which prosecutions were brought together with the number of convictions obtained.

TABLE NO. 6

SUMMARY OF PROSECUTIONS AND CONVICTIONS FOR VIOLATIONS OF STATE LAW AND LOCAL ORDINANCES RELATING TO WEIGHTS AND MEASURES FROM JULY 1, 1916, TO JUNE 30, 1917.

City	Number of Pro- secu- tions	Number of Con- victions
Amherst Junction.....	1	1
Ashland.....	3	1
Beloit.....	1	1
Cameron.....	1	0
Evansville.....	2	2
Hortonville.....	1	1
Kenosha.....	2	2
Kimberly.....	1	0
LaCrosse.....	2	1
Lake Geneva.....	1	1
Luck.....	1	1
Marshfield.....	2	2
Merrill.....	2	2
Madison.....	6	6
Marinette.....	1	1
Milwaukee.....	60	58
Neenah.....	1	1
Plymouth.....	1	1
Rhineland.....	2	1
Sheboygan.....	2	2
Sanborn.....	1	0
Stone Lake.....	1	0
Watertown.....	1	1
Totals.....	96	86

But few changes have been made during the past year in the personnel of the city departments of weights and measures; in fact the city sealer of weights and measures being under civil service regulation holds his office indefinitely and cannot be removed except for cause. Most of the city sealers of the state have held office for from 4 to 6 years. The only resignations occurring during the year were in Fond du Lac and Waukesha.

